# Appendix 9.15

## Materials Safety Data Sheets for Blind Boring Additives

# AMC Aus-Ben (B)



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**
AMC Aus-Ben (B)

**PRODUCT USE**
Drilling fluids compound.
Viscosifier.

**SUPPLIER**

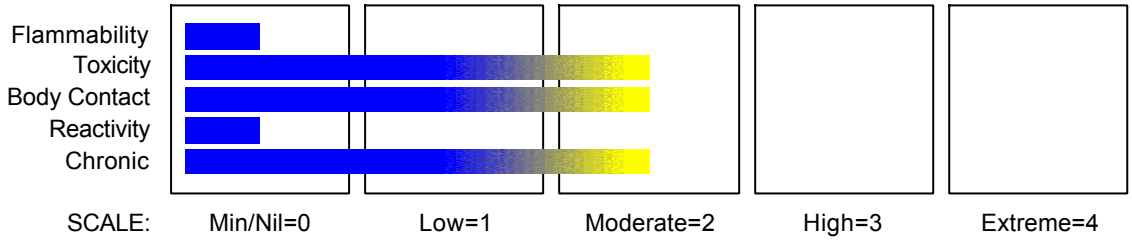
Company: AMC
Address:
5 Pitino Court
Osborne Park
WA, 6017
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

Company: AMC
Address:
PO Box 1141
Osborne Park
WA, 6916
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**
**HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.**

**CHEMWATCH HAZARD RATINGS**




RISK
■ Irritating to eyes, respiratory system and skin.
■ Harmful: danger of serious damage to health by prolonged exposure through inhalation.

SAFETY
• Do not breathe dust.

• Avoid contact with eyes.

• Wear suitable protective clothing.
• Use only in well ventilated areas.
• Keep container in a well ventilated place.
• To clean the floor and all objects contaminated by this material, use water and detergent.

**continued...**

• Keep away from food, drink and animal feeding stuffs.
• In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
• If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| bentonite | 1302-78-9 | >98 |
| silica crystalline - quartz | 14808-60-7 | <1.5 |

## Section 4 - FIRST AID MEASURES

**SWALLOWED**
• Immediately give a glass of water.
• First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**EYE**
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**
■ If skin or hair contact occurs:
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

**INHALED**
• If fumes or combustion products are inhaled remove from contaminated area.
• Lay patient down. Keep warm and rested.
• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
• Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
• If dust is inhaled, remove from contaminated area.
• Encourage patient to blow nose to ensure clear breathing passages.
• Ask patient to rinse mouth with water but to not drink water.
• Seek immediate medical attention.

**NOTES TO PHYSICIAN**
■ Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**
• There is no restriction on the type of extinguisher which may be used.
• Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves for fire only.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use fire fighting procedures suitable for surrounding area.

**continued...**

**FIRE/EXPLOSION HAZARD**
• Non combustible.
• Not considered a significant fire risk, however containers may burn.

**FIRE INCOMPATIBILITY**
■ None known.

**HAZCHEM**
None

**Personal Protective Equipment**
Gloves, boots (chemical resistant).
Breathing apparatus.

## Section 6 - ACCIDENTAL RELEASE MEASURES

**MINOR SPILLS**
• Remove all ignition sources.
• Clean up all spills immediately.
• Avoid contact with skin and eyes.
• Control personal contact by using protective equipment.

**MAJOR SPILLS**
■ Moderate hazard.
• CAUTION: Advise personnel in area.
• Alert Emergency Services and tell them location and nature of hazard.
• Control personal contact by wearing protective clothing.
• Prevent, by any means available, spillage from entering drains or water courses.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**
• Avoid all personal contact, including inhalation.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Prevent concentration in hollows and sumps.

**SUITABLE CONTAINER**
• Polyethylene or polypropylene container.
• Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**
■ None known.

**STORAGE REQUIREMENTS**
• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry, well-ventilated area.
• Store away from incompatible materials and foodstuff containers.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE CONTROLS**

| Source | Material | TWA ppm | TWA mg/m³ | STEL ppm | STEL mg/m³ | Peak ppm | Peak mg/m³ | TWA F/CC | Notes |
|---|---|---|---|---|---|---|---|---|---|

**continued...**

| Source | Material | TWA ppm | TWA mg/m³ | STEL ppm | STEL mg/m³ | Peak ppm | Peak mg/m³ | TWA F/CC | Notes |
|---|---|---|---|---|---|---|---|---|---|
| Australia Exposure Standards | silica crystalline - quartz (Silica - Crystalline Quartz) | | 0.1 | | | | | | (see Chapter 14) |
| Australia Exposure Standards | silica crystalline - quartz (Silica - Amorphous Fumed silica (respirable dust)) | | 2 | | | | | | (see Chapter 14) |

The following materials had no OELs on our records
• bentonite: CAS:1302- 78- 9 CAS:11004- 12- 9

**PERSONAL PROTECTION**




**RESPIRATOR**
Type AX-P Filter of sufficient capacity

**EYE**
• Safety glasses with side shields.
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**
■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
• frequency and duration of contact,
• chemical resistance of glove material,
• glove thickness and
• dexterity.
Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
• polychloroprene
• nitrile rubber
• butyl rubber
• fluorocaoutchouc.

**OTHER**
• Overalls.
• P.V.C. apron.
• Barrier cream.
• Skin cleansing cream.

**ENGINEERING CONTROLS**
■ Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.

**continued...**

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**
Grey/tan odourless solid powder; insoluble in water - forms a colloidal suspension.

**PHYSICAL PROPERTIES**
Does not mix with water.
Sinks in water.

| | | | |
|---|---|---|---|
| State | Divided Solid | Molecular Weight | Not Applicable |
| Melting Range (°C) | Not Available | Viscosity | Not Applicable |
| Boiling Range (°C) | Not Applicable | Solubility in water (g/L) | Immiscible |
| Flash Point (°C) | Not Applicable | pH (1% solution) | Not Applicable |
| Decomposition Temp (°C) | Not Available | pH (as supplied) | Not Applicable |
| Autoignition Temp (°C) | Not Available | Vapour Pressure (kPa) | Not Applicable |
| Upper Explosive Limit (%) | Not Applicable | Specific Gravity (water=1) | 2.6- 2.7 |
| Lower Explosive Limit (%) | Not Applicable | Relative Vapour Density (air=1) | Not Applicable |
| Volatile Component (%vol) | Not Applicable | Evaporation Rate | Not Applicable |

## Section 10 - STABILITY AND REACTIVITY

**CONDITIONS CONTRIBUTING TO INSTABILITY**
• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.
*For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

**POTENTIAL HEALTH EFFECTS**

ACUTE HEALTH EFFECTS
■ Irritating to eyes, respiratory system and skin.
■ Inhalation may produce health damage*.
■ * (limited evidence).

CHRONIC HEALTH EFFECTS
■ Harmful: danger of serious damage to health by prolonged exposure through inhalation.
■ Cumulative effects may result following exposure*.
■ * (limited evidence).

**TOXICITY AND IRRITATION**
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

AMC AUS-BEN (B):
■ Not available. Refer to individual constituents.

BENTONITE:
TOXICITY
Intravenous (Rat) LD50: 35 mg/kg
Intravenous (Dog) LD: 10 mg/kg

IRRITATION

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.
No significant acute toxicological data identified in literature search.
for bentonite clays:
Bentonite (CAS No. 1302-78-9) consists of a group of clays formed by crystallisation of vitreous volcanic ashes that were deposited in water.<</>.

SILICA CRYSTALLINE - QUARTZ:
TOXICITY
Inhalation (human) LCLo: 0.3 mg/m³/10Y
Inhalation (human) TCLo: 16 mppcf*/8H/17.9Y
Inhalation (rat) TCLo: 50 mg/m³/6H/71W

IRRITATION
Nil Reported

■ WARNING: For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS.
The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (<5 um) crystalline silica as being

**continued...**

carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite.
Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours.

## Section 12 - ECOLOGICAL INFORMATION

No data
May be harmful to fauna if not disposed of according to Section 13 and legislative requirements. [AMC]

## Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.
A Hierarchy of Controls seems to be common - the user should investigate:
• Reduction.
• DO NOT allow wash water from cleaning or process equipment to enter drains.
• It may be necessary to collect all wash water for treatment before disposal.
• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
• Where in doubt contact the responsible authority.
• Recycle wherever possible or consult manufacturer for recycling options.
• Consult State Land Waste Management Authority for disposal.
• Bury residue in an authorised landfill.
• Recycle containers if possible, or dispose of in an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION

**HAZCHEM:**
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

**REGULATIONS**

**Regulations for ingredients**

**bentonite (CAS: 1302-78-9,11004-12-9) is found on the following regulatory lists;**
"Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals"

**silica crystalline - quartz (CAS: 14808-60-7,122304-48-7,122304-49-8,12425-26-2,1317-79-9, 70594-95-5,87347-84-0) is found on the following regulatory lists;**
"Australia - New South Wales Hazardous Substances Prohibited for Specific Uses","Australia - New South Wales Hazardous Substances Requiring Health Surveillance","Australia - South Australia Hazardous Substances Requiring Health Surveillance","Australia - Tasmania Hazardous Substances Prohibited for Specified Uses","Australia - Tasmania Hazardous Substances Requiring Health Surveillance","Australia - Western Australia Hazardous Substances Requiring Health Surveillance","Australia Exposure Standards","Australia Hazardous Substances","Australia Hazardous Substances Requiring Health Surveillance","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","Australia Occupational Health and Safety (Commonwealth Employment) (National Standards) Regulations 1994 - Hazardous Substances Requiring Health Surveillance", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs","OECD Representative List of High Production Volume (HPV) Chemicals"

**No data for AMC Aus-Ben (B) (CW: 7176-67)**

**continued...**

## Section 16 - OTHER INFORMATION

**INGREDIENTS WITH MULTIPLE CAS NUMBERS**

| Ingredient Name | CAS |
|---|---|
| bentonite | 1302-78-9, 11004-12-9 |
| silica crystalline - quartz | 14808-60-7, 122304-48-7, 122304-49-8, 12425-26-2, 1317-79-9, 70594-95-5, 87347-84-0 |

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.



Issue Date: 6-May-2009
Print Date: 9-Feb-2011

*This is the end of the MSDS.*

# AMC Aus-Gel



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**
AMC Aus-Gel

**SYNONYMS**
"drilling fluid", viscosifier

**PRODUCT USE**
Drilling fluid compound; viscosifier.

**SUPPLIER**

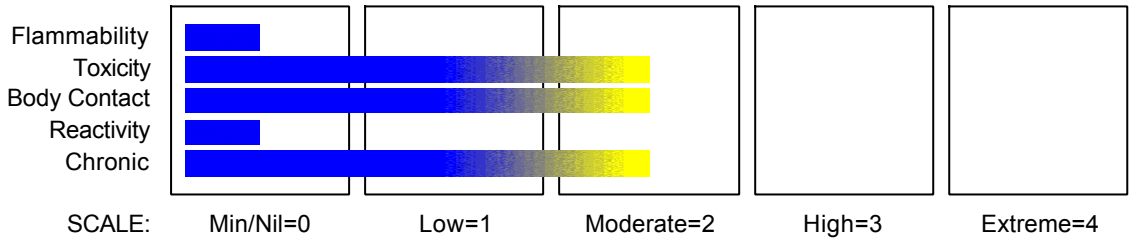
Company: AMC
Address:
5 Pitino Court
Osborne Park
WA, 6017
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

Company: AMC
Address:
PO Box 1141
Osborne Park
WA, 6916
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**
**HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.**

**CHEMWATCH HAZARD RATINGS**




RISK
■ Irritating to eyes, respiratory system and skin.

SAFETY
• Do not breathe dust.

• Avoid contact with skin.
• Wear eye/face protection.
• To clean the floor and all objects contaminated by this material, use water and detergent.
• In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
• If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

**continued...**

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| bentonite | 1302-78-9 | >98 |
| polyacrylamide | | NotSpec |

## Section 4 - FIRST AID MEASURES

**SWALLOWED**
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

**EYE**
- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**
- If skin or hair contact occurs:
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

**INHALED**
- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear breathing passages.
- Ask patient to rinse mouth with water but to not drink water.
- Seek immediate medical attention.
- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

**NOTES TO PHYSICIAN**
- Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**
- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.

**FIRE/EXPLOSION HAZARD**
- Non combustible.
- Not considered a significant fire risk, however containers may burn.

**FIRE INCOMPATIBILITY**
- None known.

**continued...**

**HAZCHEM**
None

**Personal Protective Equipment**
Gloves, boots (chemical resistant).
Breathing apparatus.

## Section 6 - ACCIDENTAL RELEASE MEASURES

**MINOR SPILLS**
• Remove all ignition sources.
• Clean up all spills immediately.
• Avoid contact with skin and eyes.
• Control personal contact by using protective equipment.

**MAJOR SPILLS**
■ Moderate hazard.
• CAUTION: Advise personnel in area.
• Alert Emergency Services and tell them location and nature of hazard.
• Control personal contact by wearing protective clothing.
• Prevent, by any means available, spillage from entering drains or water courses.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**
• Limit all unnecessary personal contact.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Avoid contact with incompatible materials.

**SUITABLE CONTAINER**
• Polyethylene or polypropylene container.
• Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**
■ None known.

**STORAGE REQUIREMENTS**
• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry area protected from environmental extremes.
• Store away from incompatible materials and foodstuff containers.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE CONTROLS**
The following materials had no OELs on our records
• bentonite: CAS:1302- 78- 9 CAS:11004- 12- 9

**PERSONAL PROTECTION**




**continued...**

**RESPIRATOR**
Particulate

**EYE**
- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**
- Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

**OTHER**
- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.

**ENGINEERING CONTROLS**
■ Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**
Grey/tan odourless powder; insoluble in water.

**PHYSICAL PROPERTIES**
Does not mix with water.

| | | | |
|---|---|---|---|
| State | Divided Solid | Molecular Weight | Not Applicable |
| Melting Range (°C) | Not Available | Viscosity | Not Applicable |
| Boiling Range (°C) | Not Available | Solubility in water (g/L) | Immiscible |
| Flash Point (°C) | Not Applicable | pH (1% solution) | Not Available |
| Decomposition Temp (°C) | Not Available | pH (as supplied) | Not Applicable |
| Autoignition Temp (°C) | Not Applicable | Vapour Pressure (kPa) | Not Applicable |
| Upper Explosive Limit (%) | Not Applicable | Specific Gravity (water=1) | Not Available |
| Lower Explosive Limit (%) | Not Applicable | Relative Vapour Density (air=1) | Not Applicable |
| Volatile Component (%vol) | Not Applicable | Evaporation Rate | Not Applicable |

## Section 10 - STABILITY AND REACTIVITY

**CONDITIONS CONTRIBUTING TO INSTABILITY**
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

*For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

**POTENTIAL HEALTH EFFECTS**
ACUTE HEALTH EFFECTS
■ Irritating to eyes, respiratory system and skin.

CHRONIC HEALTH EFFECTS
- Generally not applicable.

**TOXICITY AND IRRITATION**
AMC AUS-GEL:
■ Not available. Refer to individual constituents.

**continued...**

BENTONITE:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY IRRITATION
Intravenous (Rat) LD50: 35 mg/kg
Intravenous (Dog) LD: 10 mg/kg
■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.
No significant acute toxicological data identified in literature search.
for bentonite clays:
Bentonite (CAS No. 1302-78-9) consists of a group of clays formed by crystallisation of vitreous volcanic ashes that were deposited in water.<</>.

## Section 12 - ECOLOGICAL INFORMATION

No data
May be harmful to fauna if not disposed of according to Section 13 and legislative requirements. [AMC]

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## Section 14 - TRANSPORTATION INFORMATION

**HAZCHEM:**
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

**REGULATIONS**

**Regulations for ingredients**

**bentonite (CAS: 1302-78-9,11004-12-9) is found on the following regulatory lists;**
"Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals"

**No data for AMC Aus-Gel (CW: 42071)**

## Section 16 - OTHER INFORMATION

**INGREDIENTS WITH MULTIPLE CAS NUMBERS**

| Ingredient Name | CAS |
|---|---|
| bentonite | 1302-78-9, 11004-12-9 |

**continued...**

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.



Issue Date: 11-Feb-2010
Print Date: 9-Feb-2011

*This is the end of the MSDS.*

# AUSTRALIAN MUD AMC PAC L



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**

AUSTRALIAN MUD AMC PAC L

**SYNONYMS**

AMC-PAC, "AMC-PAC R"

**PRODUCT USE**

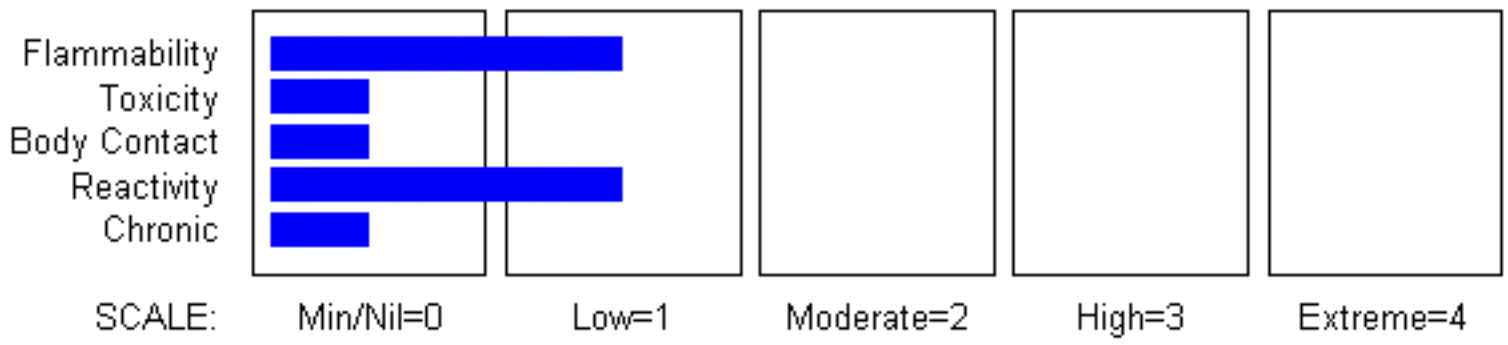
Drilling fluids compound. Viscosifier/fluid loss reducer.

**SUPPLIER**

Company: Australian Mud Company
Address:
5 Pitino Court
Osborne Park
WA, 6017
AUS
Telephone: +61 8 9445 4000
Emergency Tel: 08 9445 4040

Company: Australian Mud Company Ltd
Address:
PO Box 1141
Osborne Park
WA, 6916
AUS
Telephone: +61 8 9445 4000
Fax: +61 8 9445 4040

**HAZARD RATINGS**




## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

**POISONS SCHEDULE**

None

RISK
None under normal operating conditions.

SAFETY
None under normal operating conditions.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| sodium carboxymethylcellulose | 9004-32-4 | 100 |

**continued...**

## Section 4 - FIRST AID MEASURES

**SWALLOWED**

· If swallowed do NOT induce vomiting.
· If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
· Observe the patient carefully.
· Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
· Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
· Seek medical advice.

**EYE**

If this product comes in contact with the eyes:
· Wash out immediately with fresh running water.
· Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
· If pain persists or recurs seek medical attention.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**

If skin or hair contact occurs:
· Flush skin and hair with running water (and soap if available).
· Seek medical attention in event of irritation.

**INHALED**

· If dust is inhaled, remove from contaminated area.
· Encourage patient to blow nose to ensure clear passage of breathing.
· If irritation or discomfort persists seek medical attention.

**NOTES TO PHYSICIAN**

Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**

· There is no restriction on the type of extinguisher which may be used.
· Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**

· Alert Fire Brigade and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves for fire only.
· Prevent, by any means available, spillage from entering drains or water courses.
· Use fire fighting procedures suitable for surrounding area.
· DO NOT approach containers suspected to be hot.
· Cool fire exposed containers with water spray from a protected location.
· If safe to do so, remove containers from path of fire.
· Equipment should be thoroughly decontaminated after use.

**FIRE/EXPLOSION HAZARD**

· Solid which exhibits difficult combustion or is difficult to ignite.

**continued...**

· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
· Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.
· Build-up of electrostatic charge may be prevented by bonding and grounding.
· Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.
· All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.

Combustion products include: carbon monoxide (CO), carbon dioxide ($CO_2$), other pyrolysis products typical of burning organic material.

**FIRE INCOMPATIBILITY**

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

**HAZCHEM: None**

## Section 6 - ACCIDENTAL RELEASE MEASURES

**EMERGENCY PROCEDURES**

**MINOR SPILLS**

· Clean up all spills immediately.
· Avoid contact with skin and eyes.
· Wear impervious gloves and safety glasses.
· Use dry clean up procedures and avoid generating dust.
· Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
· Do NOT use air hoses for cleaning
· Place spilled material in clean, dry, sealable, labelled container.

**MAJOR SPILLS**

· Clear area of personnel and move upwind.
· Alert Fire Brigade and tell them location and nature of hazard.
· Control personal contact by using protective equipment and dust respirator.
· Prevent spillage from entering drains, sewers or water courses.
· Avoid generating dust.
· Sweep, shovel up. Recover product wherever possible.
· Put residues in labelled plastic bags or other containers for disposal.
· If contamination of drains or waterways occurs, advise emergency services.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**

· Limit all unnecessary personal contact.
· Wear protective clothing when risk of exposure occurs.

**continued...**

· Use in a well-ventilated area.
· Avoid contact with incompatible materials.
· When handling, DO NOT eat, drink or smoke.
· Keep containers securely sealed when not in use.
· Avoid physical damage to containers.
· Always wash hands with soap and water after handling.
· Work clothes should be laundered separately.
· Use good occupational work practice.
· Observe manufacturer's storing and handling recommendations.
· Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

**SUITABLE CONTAINER**

Multi-ply paper bag with sealed plastic liner or heavy gauge plastic bag.
NOTE: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.
· Lined metal can, lined metal pail/ can.
· Plastic pail.
· Polyliner drum.
· Packing as recommended by manufacturer.
· Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**

Avoid contamination of water, foodstuffs, feed or seed.
Cellulose and its derivatives may react vigorously with calcium oxide, bleaching powder, perchlorates, perchloric acid, sodium chlorate, fluorine, nitric acid, sodium nitrate and sodium nitrite.
May be incompatible with aminacrine hydrochloride, chlorocresol, mercuric chloride, phenol, resorcinol, tannic acid and silver nitrate.
· Avoid reaction with oxidising agents.

**STORAGE REQUIREMENTS**

· Store in original containers.
· Keep containers securely sealed.
· Store in a cool, dry, well-ventilated area.
· Store away from incompatible materials and foodstuff containers.
· Protect containers against physical damage and check regularly for leaks.
· Observe manufacturer's storing and handling recommendations.

**SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS**

| | | | | | |
|---|---|---|---|---|---|
| + | + | + | + | + | + |

+: *May be stored together*
O: *May be stored together with specific preventions*
X: *Must not be stored together*

**continued...**

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

| Source | Material | TWA mg/m³ |
|---|---|---|
| Australia Exposure Standards | sodium carboxymethylcellulose (Inspirable dust (not otherwise classified)) | 10 |

### MATERIAL DATA

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.
At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.
NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

**INGREDIENT DATA**

SODIUM CARBOXYMETHYLCELLULOSE:
These "dusts" have little adverse effect on the lungs and do not produce toxic effects or organic disease. Although there is no dust which does not evoke some cellular response at sufficiently high concentrations, the cellular response caused by P.N.O.C.s has the following characteristics:
· the architecture of the air spaces remain intact,
· scar tissue (collagen) is not synthesised to any degree,
· tissue reaction is potentially reversible.
Extensive concentrations of P.N.O.C.s may:
· seriously reduce visibility,
· cause unpleasant deposits in the eyes, ears and nasal passages,
· contribute to skin or mucous membrane injury by chemical or mechanical action, per se, or by the rigorous skin cleansing procedures necessary for their removal. [ACGIH]
This limit does not apply:
· to brief exposures to higher concentrations
· nor does it apply to those substances that may cause physiological impairment at lower concentrations but for which a TLV has as yet to be determined.
This exposure standard applies to particles which
· are insoluble or poorly soluble* in water or, preferably, in aqueous lung fluid (if data is available) and
· have a low toxicity (i.e.. are not cytotoxic, genotoxic, or otherwise chemically reactive with lung tissue, and do not emit ionizing radiation, cause immune sensitization, or cause toxic effects other than by inflammation or by a mechanism of lung overload).

### PERSONAL PROTECTION



**continued...**

**EYE**

· Safety glasses with side shields
· Chemical goggles.
· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**

Suitability and durability of glove type is dependent on usage. Factors such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity,
are important in the selection of gloves.
Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
· polychloroprene
· nitrile rubber
· butyl rubber
· fluorocaoutchouc
· polyvinyl chloride
Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

No special equipment needed when handling small quantities.
OTHERWISE:
· Overalls.
· Barrier cream.
· Eyewash unit.

**RESPIRATOR**

| Protection Factor | Half- Face Respirator | Full- Face Respirator | Powered Air Respirator |
|---|---|---|---|
| 10 x ES | P1 Air- line* | - - | PAPR- P1 - |
| 50 x ES | Air- line** | P2 | PAPR- P2 |
| 100 x ES | - | P3 | - |
| | | Air- line* | - |
| 100+ x ES | - | Air- line** | PAPR- P3 |

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

**ENGINEERING CONTROLS**

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by

**continued...**

mutual friction.
· If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.
Such protection might consist of:
(a): particle dust respirators, if necessary, combined with an absorption cartridge;
(b): filter respirators with absorption cartridge or canister of the right type;
(c): fresh-air hoods or masks.
Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

| Type of Contaminant: | Air Speed: |
|---|---|
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1- 2.5 m/s (200- 500 f/min.) |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5- 10 m/s (500- 2000 f/min.) |

Within each range the appropriate value depends on:

| Lower end of the range | Upper end of the range |
|---|---|
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity |
| 3: Intermittent, low production. | 3: High production, heavy use |
| 4: Large hood or large air mass in motion | 4: Small hood- local control only |

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**
Lightly coloured odourless powder; soluble in water.

**PHYSICAL PROPERTIES**
Mixes with water.

| | |
|---|---|
| Molecular Weight: Not Applicable | Boiling Range (°C): Not Applicable |
| Melting Range (°C): Not Available | Specific Gravity (water=1): 1.5- 1.6 |

**continued...**

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Solubility in water (g/L): Miscible
pH (1% solution): 5- 8
Volatile Component (%vol): Not Applicable
Relative Vapour Density (air=1): Not Applicable
Lower Explosive Limit (%): Not Available
Autoignition Temp (°C): Not Available
State: Divided Solid

pH (as supplied): Not Applicable
Vapour Pressure (kPa): Not Applicable
Evaporation Rate: Not Applicable
Flash Point (°C): Not Applicable

Upper Explosive Limit (%): Not Available
Decomposition Temp (°C): Not Available
Viscosity: Not Applicable

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

**CONDITIONS CONTRIBUTING TO INSTABILITY**

Product is considered stable and hazardous polymerisation will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

**POTENTIAL HEALTH EFFECTS**

**ACUTE HEALTH EFFECTS**

**SWALLOWED**

Bulk laxatives can cause temporary bloating and blockage of the oesophagus and/or intestine. As they shorten the time of digestion, the absorption of other drugs will be affected.
High molecular weight material; on single acute exposure would be expected to pass through gastrointestinal tract with little change / absorption. Occasionally accumulation of the solid material within the alimentary tract may result in formation of a bezoar (concretion), producing discomfort.
Polysaccharides are not easily absorbed from the digestive tract, but may produce a laxative effect. Larger doses may produce intestinal or stomach blockage.
Methylcellulose may temporarily increase flatulence. Obstruction of the oesophagus may occur if the material is swallowed dry.
Ingestion of hetastarch (hydroxyehtyl amylopectin) has reportedly produced fever, chills, urticaria and salivary gland enlargement. Large volumes of hetastarch taken by mouth may interfere with blood clotting, and increase the risk of bleeding. Anaphylaxis has occurred.
Infusion of dextrans may occasionally produce allergic reactions, such as urticaria, low blood pressure and spasm of the bronchi. Severe anaphylactic reactions may occasionally occur and death may result from stoppage of the heart and breathing. Similarly, allergic reactions have been reported following ingestion or inhalation of tragacanth gums.

**EYE**

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

**SKIN**

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

**continued...**

**INHALED**
The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

**CHRONIC HEALTH EFFECTS**
Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.
Studies indicate that diets containing large amounts of non-absorbable polysaccharides, such as cellulose, might decrease absorption of calcium, magnesium, zinc and phosphorus.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

**TOXICITY AND IRRITATION**
Not available. Refer to individual constituents.

SODIUM CARBOXYMETHYLCELLULOSE:
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

| TOXICITY | IRRITATION |
|---|---|
| Oral (rat) LD50: 27000 mg/kg | Nil Reported |
| Oral (rat) TDLo: 140 mg/kg | |
| Neoplastic by RTECS criteria | |

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## Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.
Refer to data for ingredients, which follows:

SODIUM CARBOXYMETHYLCELLULOSE:
Cellulosic products, including cellulose ethers, generally have a low biodegradation rate and are generally of low toxicity to fish.
Sugar-based compounds (saccharides), including polysaccharides are generally easily decomposed by biodegradation. Not all polysaccharides decompose with equal rapidity, and polysaccharides are also synthesised by microorganisms during, for example, the compost maturation phases. Water-insoluble species such as cellulose take longer to decompose and those with a significant degree of branching also take longer.

## Section 13 - DISPOSAL CONSIDERATIONS

· Recycle wherever possible.
· Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
· Dispose of by: Burial in a licenced land-fill or Incineration in a licenced apparatus (after admixture with suitable combustible material)
· Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

**continued...**

## Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**POISONS SCHEDULE: None**

**REGULATIONS**

Australian Mud AMC PAC L (CAS: None):
No regulations applicable

sodium carboxymethylcellulose (CAS: 9004-32-4) is found on the following regulatory lists;
Australia Exposure Standards
Australia Inventory of Chemical Substances (AICS)
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP
OECD Representative List of High Production Volume (HPV) Chemicals

## Section 16 - OTHER INFORMATION

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.



Issue Date: 6-Sep-2007
Print Date: 2-May-2008

# MATERIAL SAFETY DATA SHEET

# CLAY MASTER P

## 1. PRODUCT IDENTIFICATION

**TRADE NAME:** **CLAY MASTER P**
**Use:** A drilling fluid additive
**Description:** Liquid Clay Stabiliser and KCl replacement

**Supplier Name:** **Fluidstar (Pty) Ltd**
Address: Unit 3/No. 1 General McArthur Place Redbank Qld 4301
Telephone: + 61(0) 7 3288 4480, email: info@fluidstar.com.au
Emergency Contact: +61 400 195 406

## 2. HAZARDS IDENTIFICATION

**NON-HAZARDOUS and NON-DANGEROUS ACCORDING TO THE WORKSAFE AUSTRALIA CRITERIA [NOHSC:1008(1994)]**

**HAZARD CLASS:** None
**RISK PHRASE:** None
**SAFETY PHRASES:** None

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| Ingredient | CAS # | Concentration |
|---|---|---|
| Non-hazardous ingredients | **Mixture** | 100% |

## 4. FIRST AID INFORMATION

**EYES:**
May cause some irritation which should cease on removal of product. Flush immediately with large amounts of water or saline solution. If there is any irritation, obtain medical attention immediately.

**SKIN:**
No known effect on skin contact. Wash thoroughly with soap and rinse with water. Remove contaminated clothing and wash before re-use.

**INGESTION:**
Low toxicity product. Do not induce vomiting. Give water. Call a physician.

**INHALATION:**
Remove to fresh air. Treat symptoms.

**AGGRAVATION OF EXISTING CONDITIONS:**
A review of available data does not identify any worsening of existing conditions.

## 5. FIRE FIGHTING MEASURES

**FLAMMABILITY:**
Non flammable. Use water to cool containers exposed to fire.

**EXTINGUISHING MEDIA:**
*SMALL FIRE:* Use dry chemical powder, alcohol foam
*LARGE FIRE:* Use water spray, fog or foam. DO NOT use water jet. Residue of evaporation could burn.

## 6. ACCIDENTAL RELEASE MEASURES

**SPILL CONTROL AND RECOVERY:**
Small liquid spills: Contain with absorbent material such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal.

**LARGE LIQUID SPILLS:**
Dike to prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 8. Spillage of the product will cause extremely slippery conditions.

**DISPOSAL:**
If this product becomes a waste, it does not meet the criteria of a hazardous waste.

## 7. HANDLING AND STORAGE

**HANDLING:**
Do not eat, drink or smoke whilst handling the product. Wash hands after use. Remove contaminated clothing immediately and launder before reuse. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas, fumes, vapour or spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles as oxidizing agents.

**STORAGE:**
No special storage conditions required. Keep container closed at all times. Avoid extremes of temperature.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**RESPIRATORY PROTECTION:**
Respiratory protection is not normally needed since the volatility and toxicity is low. If significant mists are generated, use either a chemical cartridge respiratory with a dust/ mist pre-filter or supplied air.

For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a pressure-demand, self-contained breathing apparatus is recommended.

**VENTILATION:**
General ventilation is recommended.

**PROTECTIVE EQUIPMENT:**
Use impermeable gloves and chemical splash goggles when attaching feeding equipment or doing maintenance or handling product. Examples of impermeable gloves available on the market are neoprene, nitrile, PVC, natural rubber, viton and butyl (compatibility studies have not been performed).The availability of an eye wash fountain and safety shower is recommended. If clothing is contaminated, remove clothing and thoroughly was the affected area. Launder contaminated clothing before use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **COLOR:** | Colourless to light yellow |
| **FORM:** | Liquid |
| **ODOUR:** | Slight Fish odor |
| **SOLUBILITY IN WATER:** | Totally soluble |
| **SPECIFIC GRAVITY:** | 1.10 |
| **pH:** | Near neutral |
| **FLASH POINT:** | Not applicable |
| **NOTE:** | These physical properties are typical values for this product. |

## 10. STABILITY AND REACTIVITY

This product is stable.

## 11. TOXICOLOGY INFORMATION

This product has low toxicity for marine applications.

## 12. ECOLOGICAL INFORMATION

No data available, low toxicity.

## 13. DISPOSAL REGULATIONS

**DISPOSAL:** If this product becomes a waste, it does not meet the criteria of a hazardous waste.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to an industrial waste landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, provincial and government regulations.

Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

## 14. TRANSPORT INFORMATION

**PRODUCT IS NOT REGULATED DURING TRANSPORTATION**

| | |
|---|---|
| **UN NUMBER:** | None allocated |
| **SHIPPING NAME:** | None allocated |
| **HAZCHEM CODE:** | None allocated |
| **SUBSIDIARY RISK:** | None allocated |
| **PACKAGING GROUP:** | None allocated |
| **EPG NUMBER:** | None allocated |
| **DANGEROUS GOODS CLASS:** | None allocated |

**LIST OF TOXIC CHEMICALS:**
This product does not contain ingredients listed in the List of Toxic Chemicals

**WATER POLLUTION CONTROL:**
None of the ingredients are of specification.

**AIR POLLUTION CONTROL:**
This product does not contain ingredients that will contribute to air pollution under normal use conditions.

---

## 15. REGULATORY INFORMATION

**POISONS SCHEDULE:**
None allocated.

**AICS:**
All chemicals listed on the Australian Inventory of Chemical Substances.

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## 16. OTHER INFORMATION

| | |
|---|---|
| **Date of Preparation:** | Issue Date 5 November 2009 |
| Revised: | 5 November 2009 |

**CONTACT POINTS**

| ORGANISATION | TELEPHONE |
|---|---|
| Poisons Information Centre –Australia Wide | 131126 |
| Fluidstar | +61 7 3288 8485 |
| | 0400 195 406 |
| Fire Brigade | 000 |
| Police | 000 |

### Disclaimer:

Every endeavor has been made to ensure that the information contained in this publication is reliable and offered in good faith. It is meant to describe the safety requirements of our products and should not be construed as guaranteeing specific properties. Customers are encouraged to conduct their own tests as end user suitability of the product for particular uses is beyond our control. The information is not intended as an inducement to bargain and no warranty expressed or implied is made as to its accuracy, reliability or completeness. FLUIDSTAR Pty Ltd accepts no liability for loss, injury or damage arising from reliance upon the information contained in this data sheet except in conjunction with the proper use of the product to which it refers. Due care should be taken that the use and disposal of this product is in compliance with appropriate Federal, State and Local Government regulations.

*END OF MSDS*

# AUSTRALIAN MUD CR-650



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**

AUSTRALIAN MUD CR-650

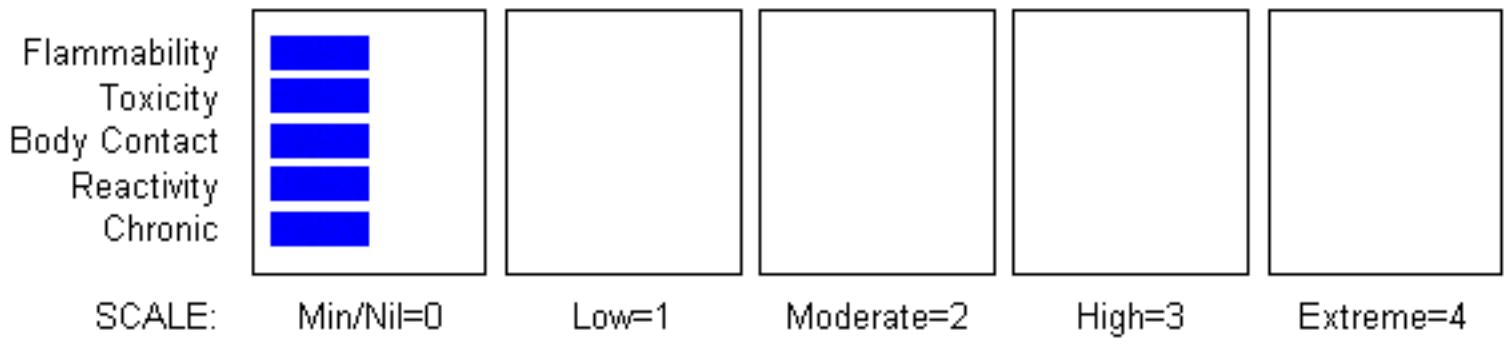
**PRODUCT USE**

Drilling fluid additive.

**SUPPLIER**

Company: Australian Mud Company Ltd
Address:
PO Box 1141
Osborne Park
WA, 6916
AUS
Telephone: +61 8 9445 4000
Fax: +61 8 9445 4040

**HAZARD RATINGS**




## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

**POISONS SCHEDULE**

None

RISK
None under normal operating conditions.

SAFETY
None under normal operating conditions.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| drilling fluid additive | | 100 |

**continued...**

## Section 4 - FIRST AID MEASURES

**SWALLOWED**

· If swallowed do NOT induce vomiting.
· If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
· Observe the patient carefully.
· Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
· Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
· Seek medical advice.

**EYE**

If this product comes in contact with eyes:
· Wash out immediately with water.
· If irritation continues, seek medical attention.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**

If skin or hair contact occurs:
· Flush skin and hair with running water (and soap if available).
· Seek medical attention in event of irritation.

**INHALED**

· If dust is inhaled, remove from contaminated area.
· Encourage patient to blow nose to ensure clear passage of breathing.
· If irritation or discomfort persists seek medical attention.

**NOTES TO PHYSICIAN**

Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**

· There is no restriction on the type of extinguisher which may be used.
· Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**

· Alert Fire Brigade and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves for fire only.
· Prevent, by any means available, spillage from entering drains or water courses.
· Use fire fighting procedures suitable for surrounding area.
· DO NOT approach containers suspected to be hot.
· Cool fire exposed containers with water spray from a protected location.
· If safe to do so, remove containers from path of fire.
· Equipment should be thoroughly decontaminated after use.

**FIRE/EXPLOSION HAZARD**

· Non combustible.
· Not considered a significant fire risk, however containers may burn.

**continued...**

**FIRE INCOMPATIBILITY**
None known.

**HAZCHEM: None**

## Section 6 - ACCIDENTAL RELEASE MEASURES

**EMERGENCY PROCEDURES**

**MINOR SPILLS**
· Clean up all spills immediately.
· Avoid contact with skin and eyes.
· Wear impervious gloves and safety glasses.
· Use dry clean up procedures and avoid generating dust.
· Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).
· Do NOT use air hoses for cleaning
· Place spilled material in clean, dry, sealable, labelled container.

**MAJOR SPILLS**
· Clear area of personnel and move upwind.
· Alert Fire Brigade and tell them location and nature of hazard.
· Control personal contact by using protective equipment and dust respirator.
· Prevent spillage from entering drains, sewers or water courses.
· Avoid generating dust.
· Sweep, shovel up. Recover product wherever possible.
· Put residues in labelled plastic bags or other containers for disposal.
· If contamination of drains or waterways occurs, advise emergency services.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**
· Limit all unnecessary personal contact.
· Wear protective clothing when risk of exposure occurs.
· Use in a well-ventilated area.
· Avoid contact with incompatible materials.
· When handling, DO NOT eat, drink or smoke.
· Keep containers securely sealed when not in use.
· Avoid physical damage to containers.
· Always wash hands with soap and water after handling.
· Work clothes should be laundered separately.
· Use good occupational work practice.
· Observe manufacturer's storing and handling recommendations.
· Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

**SUITABLE CONTAINER**
· Lined metal can, lined metal pail/ can.
· Plastic pail.
· Polyliner drum.

**continued...**

· Packing as recommended by manufacturer.
· Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**

Avoid contamination of water, foodstuffs, feed or seed.

**STORAGE REQUIREMENTS**

· Store in original containers.
· Keep containers securely sealed.
· Store in a cool, dry, well-ventilated area.
· Store away from incompatible materials and foodstuff containers.
· Protect containers against physical damage and check regularly for leaks.
· Observe manufacturer's storing and handling recommendations.

**SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS**

\+ + + + + +

+: *May be stored together*
O: *May be stored together with specific preventions*
X: *Must not be stored together*

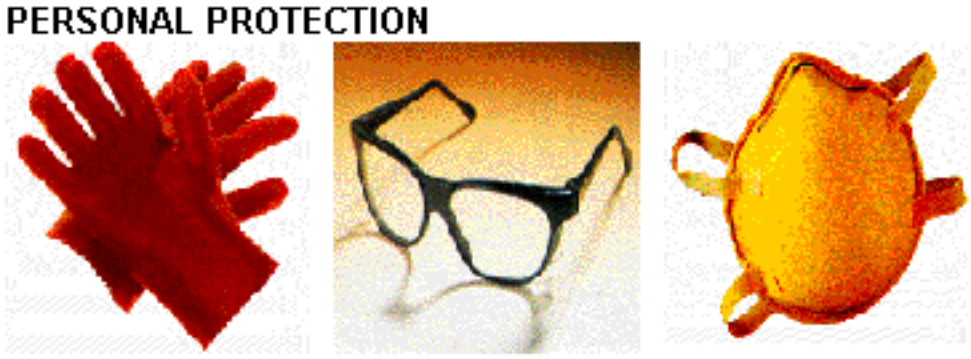
## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE CONTROLS**

**MATERIAL DATA**

Not available. Refer to individual constituents.

**PERSONAL PROTECTION**



**EYE**

· Safety glasses with side shields
· Chemical goggles.
· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be

**continued...**

removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**

Suitability and durability of glove type is dependent on usage. Factors such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity,
are important in the selection of gloves.
Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
· polychloroprene
· nitrile rubber
· butyl rubber
· fluorocaoutchouc
· polyvinyl chloride
Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

No special equipment needed when handling small quantities.
OTHERWISE:
· Overalls.
· Barrier cream.
· Eyewash unit.

**RESPIRATOR**

| Protection Factor | Half- Face Respirator | Full- Face Respirator | Powered Air Respirator |
|---|---|---|---|
| 10 x ES | P1 Air- line* | - - | PAPR- P1 - |
| 50 x ES | Air- line** | P2 | PAPR- P2 |
| 100 x ES | - | P3 | - |
| | | Air- line* | - |
| 100+ x ES | - | Air- line** | PAPR- P3 |

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

**ENGINEERING CONTROLS**

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
· If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.
Such protection might consist of:
(a): particle dust respirators, if necessary, combined with an absorption cartridge;
(b): filter respirators with absorption cartridge or canister of the right type;
(c): fresh-air hoods or masks.
Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

**continued...**

**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

| Type of Contaminant: | Air Speed: |
|---|---|
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1- 2.5 m/s (200- 500 f/min.) |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5- 10 m/s (500- 2000 f/min.) |

Within each range the appropriate value depends on:

| Lower end of the range | Upper end of the range |
|---|---|
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity |
| 3: Intermittent, low production. | 3: High production, heavy use |
| 4: Large hood or large air mass in motion | 4: Small hood- local control only |

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE**
Fine granular free-flowing solid; soluble in water.

**PHYSICAL PROPERTIES**
Mixes with water.

| | |
|---|---|
| Molecular Weight: Not Applicable | Boiling Range (°C): Not Applicable |
| Melting Range (°C): Not Available | Specific Gravity (water=1): 0.7- 0.8 |
| Solubility in water (g/L): Miscible | pH (as supplied): Not Applicable |
| pH (1% solution): ~7.5 (5% sol) | Vapour Pressure (kPa): Not Applicable |
| Volatile Component (%vol): Not Available | Evaporation Rate: Not Applicable |
| Relative Vapour Density (air=1): Not Applicable | Flash Point (°C): Not Applicable |
| Lower Explosive Limit (%): Not Applicable | Upper Explosive Limit (%): Not Applicable |
| Autoignition Temp (°C): Not Applicable | Decomposition Temp (°C): Not Available |
| State: Divided Solid | Viscosity: Not Applicable |

**continued...**

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (eg. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

#### EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

#### SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

#### INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

#### CHRONIC HEALTH EFFECTS

Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.
</pre><font face="Arial" size="2">

**continued...**

## Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.
From an analogous product:
freshwater fish (Brachydanio rerio) LC50 (96hr): 357 mg/L
Daphnia magna EC50 (48hr): 212 mg/L
freshwater unicellular algae (Chlorella vulgaris) EC50 (72hr): >1000 mg/L
bacteria (Pseudomonas putida) EC50 (24hr): 892 mg/L
[Australian Mud]

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**POISONS SCHEDULE: None**

**REGULATIONS**
Australian Mud CR-650 (CAS: None):
No regulations applicable

## Section 16 - OTHER INFORMATION

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.




**continued...**

Issue Date: 7-Sep-2007
Print Date: 2-May-2008

# SAFETY DATA SHEET
# GYPSUM

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

| | |
|---|---|
| PRODUCT NAME | GYPSUM |
| APPLICATION | Calcium source. |
| SUPPLIER | M-I SWACO.<br>Holburn House,<br>475-485, Union Street,<br>Aberdeen. AB11 6DB<br>Scotland<br>T -44 (0)1224-336336<br>F -44 (0)1224-336351 |
| EMERGENCY TELEPHONE | (24 Hour) Europe +44 (0) 208 762 8322, Asia Pacific +65 633 44 177, China +86 10 5100 3039, Middle East and Africa +961 3 487 287. |

## 2 COMPOSITION/INFORMATION ON INGREDIENTS

| Name | EC No. | CAS-No. | Content | Classification |
|---|---|---|---|---|
| GYPSUM | 231-900-3 | 7778-18-9 | 60-100% | - |
| QUARTZ, CRYSTALLINE SILICA | 238-878-4 | 14808-60-7 | <1% | Xn;R20. |

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives. This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure by inhalation to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because of quantity and composition, the health hazard is small.

## 3 HAZARDS IDENTIFICATION

Not regarded as a health or environmental hazard under current legislation.

HUMAN HEALTH

This product contains a small quantity of quartz, crystalline silica. IARC Monographs, Vol 68, 1997, concludes that there is sufficient evidence that inhaled crystalline silica in the form of quartz or crystobalite from occupational sources causes cancer in humans. IARC classification Group 1. Because of quantity and composition, the health hazard is small.

## 4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.

INGESTION

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Get medical attention if any discomfort continues.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if any discomfort continues.

EYE CONTACT

Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.

## 5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

UNUSUAL FIRE & EXPLOSION HAZARDS

High concentrations of dust may form explosive mixture with air.

SPECIFIC HAZARDS

Fire or high temperatures create: Oxides of: Sulphur.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

## 7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Avoid handling which leads to dust formation. Provide good ventilation. Do not use contact lenses.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry, cool and well-ventilated place.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

| Name | Std | LT - ppm | LT - mg/m3 | ST - ppm | ST - mg/m3 |
|---|---|---|---|---|---|
| GYPSUM | WEL | | 4 mg/m3 resp.dust | | |
| QUARTZ, CRYSTALLINE SILICA | WEL | | 0.1 mg/m3 | | |

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits

PROTECTIVE EQUIPMENT

ENGINEERING MEASURES

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

Respiratory protection must be used if air contamination exceeds acceptable level. Dust filter P3 (for especially fine dust/powder).

HAND PROTECTION

Use protective gloves made of: Rubber or plastic.

EYE PROTECTION

Wear dust resistant safety goggles where there is danger of eye contact.

OTHER PROTECTION

Wear appropriate clothing to prevent repeated or prolonged skin contact. Provide eyewash station.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| APPEARANCE | Powder, dust | | |
| COLOUR | White to White / off-white | | |
| ODOUR | Odourless | | |
| SOLUBILITY | Slightly soluble in water. | | |
| RELATIVE DENSITY | 2.3 @ 20 °c | pH-VALUE, DILUTED SOLUTION | 6 - 8 @ 10 % |
| SOLUBILITY VALUE (g/100g H2O@20°C) | 1.2 | | |

## 10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions.

MATERIALS TO AVOID

Avoid contact with: Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Fire or high temperatures create: Oxides of: Sulphur.

## 11 TOXICOLOGICAL INFORMATION

INHALATION

Dust may irritate respiratory system or lungs.

INGESTION

May cause discomfort if swallowed.

SKIN CONTACT

Powder may cause mechanical irritation to skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

HEALTH WARNINGS

This product contains a small quantity of quartz, crystalline silica. Prolonged and repeated exposure by inhalation to concentrations of crystalline silica exceeding the workplace exposure limit (WEL) may lead to chronic lung disease such as silicosis. Because of quantity and composition, the health hazard is small.

## 12 ECOLOGICAL INFORMATION

ECOTOXICITY

Contact M-I Swaco's QHSE Department for ecological information.

## 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

## 14 TRANSPORT INFORMATION

| | |
|---|---|
| GENERAL | The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID). |

## 15 REGULATORY INFORMATION

RISK PHRASES

| | |
|---|---|
| NC | Not classified. |

SAFETY PHRASES

| | |
|---|---|
| NC | Not classified. |

UK REGULATORY REFERENCES

The Control of Substances Hazardous to Health Regulations Chemicals (Hazard Information & Packaging) Regulations. IARC Monographs, Vol.68, 1997.

EU DIRECTIVES

Dangerous Substance Directive 67/548/EEC. Dangerous Preparations Directive 1999/45/EC.

GUIDANCE NOTES

Workplace Exposure Limits EH40.

## 16 OTHER INFORMATION

GENERAL INFORMATION

HMIS Health - 1 HMIS Flammability - 0 HMIS Physical Hazard - 0 E - Safety glasses, Gloves, Dust Respirator

INFORMATION SOURCES

Material Safety Data Sheet, Misc. manufacturers. Micromedex. European Chemicals Bureau - ESIS (European Chemical Substances Information System).

REVISION COMMENTS

General revision. Compiled or revised by Sandra McWilliam

ISSUED BY

Dr. Kirsty Walker

## GYPSUM

| | |
|---|---|
| REVISION DATE | 29-03-07 |
| REV. NO./REPL. SDS GENERATED | 3 |
| SDS NO. | 10271 |

RISK PHRASES IN FULL

| | |
|---|---|
| R20 | Harmful by inhalation. |

DISCLAIMER

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# SAFETY DATA SHEET
# LIME

## 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

| | |
|---|---|
| PRODUCT NAME | LIME |
| SYNONYMS, TRADE NAMES | CALCIUM HYDROXIDE |
| APPLICATION | pH modifier. |
| SUPPLIER | M-I SWACO.<br>Holburn House,<br>475-485, Union Street,<br>Aberdeen. AB11 6DB<br>Scotland. UK<br>T = +44 (0)1224-336336<br>F = +44 (0)1224-336351<br>E-mail =<br>MBXMSDS-EH@miswaco.com |
| EMERGENCY TELEPHONE | (24 Hour) Europe +44 (0) 208 762 8322, Asia Pacific +65 633 44 177, China +86 10 5100 3039, Middle East and Africa +961 3 487 287. |

## 2 HAZARDS IDENTIFICATION

Risk of serious damage to eyes.

Irritating to respiratory system and skin.

CLASSIFICATION Xi;R37/38, R41.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

| Name | EC No. | CAS-No. | Content | Classification |
|---|---|---|---|---|
| CALCIUM HYDROXIDE | 215-137-3 | 1305-62-0 | 60-100% | Xi;R37/38,R41. |

The Full Text for all R-Phrases are Displayed in Section 16

COMPOSITION COMMENTS

The data shown is in accordance with the latest EC Directives.

## 4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen. Get medical attention if any discomfort continues.

INGESTION

Immediately give a couple of glasses of water or milk, provided the victim is fully conscious. Get medical attention.

SKIN CONTACT

Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if symptoms occur after washing.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

## 5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

Use fire-extinguishing media appropriate for surrounding materials.

SPECIAL FIRE FIGHTING PROCEDURES

Containers close to fire should be removed immediately or cooled with water.

SPECIFIC HAZARDS

Dust may form an explosive mixture in the atmosphere.

PROTECTIVE MEASURES IN FIRE

Self contained breathing apparatus and full protective clothing must be worn in case of fire.

## 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

ENVIRONMENTAL PRECAUTIONS

Do not allow to enter drains, sewers or watercourses.

SPILL CLEAN UP METHODS

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

## 7 HANDLING AND STORAGE

USAGE PRECAUTIONS

Avoid inhalation of dust and contact with skin and eyes.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry, cool and well-ventilated place.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

| Name | Std | LT - ppm | LT - mg/m3 | ST - ppm | ST - mg/m3 |
|---|---|---|---|---|---|
| CALCIUM HYDROXIDE | WEL | | 5 mg/m3 | | |

INGREDIENT COMMENTS

WEL = Workplace Exposure Limits

PROTECTIVE EQUIPMENT

ENGINEERING MEASURES

Provide adequate general and local exhaust ventilation.

RESPIRATORY EQUIPMENT

No specific recommendation made, but respiratory protection may still be required under exceptional circumstances when excessive air contamination exists. Dust filter P2 (for fine dust).

HAND PROTECTION

Use protective gloves made of: Impermeable material. Rubber, neoprene or PVC.

EYE PROTECTION

Wear approved chemical safety goggles where eye exposure is reasonably probable.

OTHER PROTECTION

Wear appropriate clothing to prevent any possibility of skin contact. Provide eyewash station.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| APPEARANCE | Powder, dust |
| COLOUR | White / off-white |
| ODOUR | Odourless |
| SOLUBILITY | Slightly soluble in water. |

| | | | |
|---|---|---|---|
| MOL. WEIGHT | 74 | MELTING POINT (°C) | 580°C |
| RELATIVE DENSITY | 2.34 s.g @ 20 °c | BULK DENSITY | 2.24 g/cm3 |
| PARTICLE SIZE (Micron) | <500 | pH-VALUE, CONC. SOLUTION | 12.4 |
| SOLUBILITY VALUE (g/100g H2O@20°C) | 1.7 | | |

## 10 STABILITY AND REACTIVITY

STABILITY

Stable under normal temperature conditions and recommended use.

CONDITIONS TO AVOID

Creation of dust clouds.

MATERIALS TO AVOID

Avoid: Strong acids. Water.

## 11 TOXICOLOGICAL INFORMATION

INHALATION

Irritating to respiratory system.

INGESTION

May irritate and cause stomach pain, vomiting and diarrhoea.

SKIN CONTACT

Irritating and may cause redness and pain.

EYE CONTACT

Irritating to eyes. Particles in the eyes may cause irritation and smarting.

## 12 ECOLOGICAL INFORMATION

ECOTOXICITY

Contact M-I Swaco's QHSE Department for ecological information.

WATER HAZARD CLASSIFICATION

WGK 1

## 13 DISPOSAL CONSIDERATIONS

DISPOSAL METHODS

Recover and reclaim or recycle, if practical. Dispose of waste and residues in accordance with local authority requirements.

## 14 TRANSPORT INFORMATION

| | |
|---|---|
| GENERAL | The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID). |

## 15 REGULATORY INFORMATION

LABELLING

Irritant

RISK PHRASES

| | |
|---|---|
| R41 | Risk of serious damage to eyes. |
| R37/38 | Irritating to respiratory system and skin. |

SAFETY PHRASES

| | |
|---|---|
| S26 | In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| S51 | Use only in well-ventilated areas. |
| S24/25 | Avoid contact with skin and eyes. |
| S37/39 | Wear suitable gloves and eye/face protection. |

UK REGULATORY REFERENCES

Chemicals (Hazard Information & Packaging) Regulations. The Control of Substances Hazardous to Health Regulations 1988. Workplace Exposure Limits EH40.

EU DIRECTIVES

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.

## 16 OTHER INFORMATION

INFORMATION SOURCES

Product information provided by the commercial vendor(s). Material Safety Data Sheet, Misc. manufacturers. Micromedex. European Chemicals Bureau - ESIS (European Chemical Substances Information).

REVISION COMMENTS

General revision. Compiled or revised by Laura McDonald

ISSUED BY

Bill Cameron

| | |
|---|---|
| REVISION DATE | 04-06-08 |
| REV. NO./REPL. SDS GENERATED | 5 |
| SDS NO. | 10290 |

RISK PHRASES IN FULL

| | |
|---|---|
| R37/38 | Irritating to respiratory system and skin. |
| R41 | Risk of serious damage to eyes. |

PRODUCT

# NALCO 625

**EMERGENCY TELEPHONE NUMBER**

**Australia: 1 800 033 111 New Zealand: 0 800 734 607**

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : NALCO 625

APPLICATION : ANIONIC FLOCCULANT

COMPANY IDENTIFICATION :

Nalco Australia Pty Ltd
2 Anderson Street
Botany N.S.W. 2019
Australia
A.B.N. 41 000 424 788
TEL: +61 29 316 3000
FAX: +61 29 666 5292

Nalco New Zealand Ltd
44 Cryers Road
East Tamaki, Auckland
New Zealand

TEL: +649 2745032
FAX: +649 2747924

EMERGENCY TELEPHONE NUMBER(S) :

1 800 033111 (Australia)

0800 734607 (New Zealand)

Date issued : 05-Jan-05

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Not classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

CHEMICAL DESCRIPTION : Water, anionic high molecular weight polyacrylamide copolymer, dispersed in hydrocarbon solvent

| CHEMICAL NAME | CAS NO | % (w/w) |
|---|---|---|
| Hydrotreated Light Distillate | 64742-47-8 | 10.0 - 30.0 |
| Other ingredients determined not to be hazardous, including water | - | to 100 |

## 3. HAZARDS IDENTIFICATION

HUMAN HEALTH HAZARDS - ACUTE

EYE CONTACT
Can cause mild irritation.

SKIN CONTACT
Can cause mild irritation.

INGESTION
Not a likely route of exposure. If swallowed a jelly mass may form which in digestion may cause blockage. Can cause chemical pneumonia if aspirated into lungs following ingestion.

INHALATION
Not a likely route of exposure. Product mist or vapors may cause headache, nausea, vomiting, drowsiness, stupor or unconsciousness.

SYMPTOMS OF EXPOSURE
Acute
A review of available data does not identify any symptoms from exposure not previously mentioned.

Chronic
Frequent or prolonged contact with product may defat and dry the skin, leading to discomfort and dermatitis.

HUMAN HEALTH HAZARDS - CHRONIC
No adverse effects expected other than those mentioned above.

## 4. FIRST AID MEASURES

EYE CONTACT
Wipe or blot away excess material with clean cloth or paper towel. Wash affected areas thoroughly with water. If symptoms develop, seek medical advice.

SKIN CONTACT
Wipe or blot away excess material with clean cloth or paper towel. Wash affected areas thoroughly with water. If symptoms develop, seek medical advice.

INGESTION
Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If reflexive vomiting occurs, rinse mouth and repeat administration of water. Get medical attention. Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

INHALATION
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

## 5. FIRE FIGHTING MEASURES

FLASH POINT : > 100 °C

EXTINGUISHING MEDIA
Foam, carbon dioxide, dry powder, other extinguishing agent suitable for Class B fires. For large fires, use water spray or fog, thoroughly drenching the burning material. Water mist may be used to cool closed containers.

UNSUITABLE EXTINGUISHING MEDIA
Do not use water unless flooding amounts are available. Water in contact with the product will cause slippery floor conditions.

FIRE AND EXPLOSION HAZARD
Phase separation of the product may occur after prolonged storage. The top phase will be combustible hydrocarbon solvent. May evolve oxides of carbon (COx) under fire conditions. May evolve oxides of nitrogen (NOx) under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Remove sources of ignition. Spill may be slippery.

METHODS FOR CLEANING UP
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Soak up as thoroughly as possible with inert absorbent material or sawdust, as the addition of water causes slippery floor conditions. Reclaim into recovery or salvage drums. Wash site of spillage thoroughly with water. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS
Do not contaminate surface water.

## 7. HANDLING AND STORAGE

HANDLING
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Avoid generating aerosols and mists. Ensure all containers are labelled. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Stir well prior to use.

STORAGE CONDITIONS
Store in suitable labelled containers. Store the containers tightly closed. Store separately from oxidizers. Protect product from freezing.

SUITABLE CONSTRUCTION MATERIAL
Compatibility with Plastic Materials can vary; we therefore recommend that compatibility is tested prior to use.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS
The following component(s) have been assigned an exposure standard by NOHSC (Australia) and/or other Agencies:

| OCCUPATIONAL EXPOSURE LIMITS | TWA mg/m3 | STEL mg/m3 |
|---|---|---|
| ACGIH/TLV | | |
| OIL MIST (MINERAL) | 5 | 10 |
| AUSTRALIA | | |
| OIL MIST, REFINED MINERAL | 5 | |
| NEW ZEALAND | | |
| OIL MIST, MINERAL | 5 | 10 |
| OSHA/PEL | | |
| OIL MIST (MINERAL) | 5 | |

ENGINEERING MEASURES
General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

PERSONAL PROTECTION

GENERAL ADVICE
The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with

side-shields and workclothes protecting arms, legs and body be used. In addition any person visiting an area where this product is handled should at least wear safety glasses with side-shields.

RESPIRATORY PROTECTION
Respiratory protection is not normally needed. If significant mists, vapours or aerosols are generated an approved respirator is recommended, selected and used in accordance with AS/NZS 1715 and AS/NZS 1716. An organic vapor cartridge with dust/mist prefilter or supplied air may be used. In confined spaces, use a breathing apparatus. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION
Nitrile gloves, viton gloves, PVC gloves.

SKIN PROTECTION
Wear standard protective clothing.

EYE PROTECTION
Wear chemical splash goggles.

HYGIENE RECOMMENDATIONS
Use good work and personal hygiene practices to avoid exposure. Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| PHYSICAL STATE | Liquid |
| APPEARANCE | Opaque, off-white |
| ODOR | Hydrocarbon |
| FLASH POINT | > 100 °C (PMCC) |
| SPECIFIC GRAVITY | 1.03 - 1.07 @ 25 °C |
| SOLUBILITY IN WATER | Dispersible |
| pH ( 100% ) | 8 |
| VISCOSITY | 400 - 1200 cPs @ 25 °C |
| FREEZING POINT | -20 °C |
| VOC CONTENT | 27.4 % |

Note: These physical properties are typical values for this product and are subject to change.

## 10. STABILITY AND REACTIVITY

STABILITY
Stable under normal conditions.

HAZARDOUS POLYMERIZATION
Hazardous polymerization will not occur.

CONDITIONS TO AVOID
High temperatures, freezing temperatures. Heat and sources of ignition.

MATERIALS TO AVOID

Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Addition of water results in gelling.

HAZARDOUS DECOMPOSITION PRODUCTS
Under fire conditions: Oxides of carbon
Oxides of nitrogen

## 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA
No toxicity studies have been conducted on this product.

SENSITIZATION
This product is not expected to be a sensitizer.

CARCINOGENICITY
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION
Based on our hazard characterization, the potential human hazard is: Low

## 12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS
The following results are for a similar product.

ACUTE FISH RESULTS

| Species | Exposure | LC50 | Tested Substance |
|---|---|---|---|
| Rainbow Trout | 96 hrs | > 1000 mg/L | Similar Product |
| Sheepshead Minnow | 96 hrs | > 1000 mg/L | Similar Product |

Rating: Essentially non-toxic

ACUTE INVERTEBRATE RESULTS

| Species | Exposure | LC50 | Tested Substance |
|---|---|---|---|
| Mysid Shrimp (M. bahia) | 96 hrs | 400 mg/L | Similar Product |
| Daphnia magna | 48 hrs | 280 mg/L | Similar Product |

Rating: Slightly toxic

MOBILITY AND BIOACCUMULATION POTENTIAL
The environmental fate was estimated using a level III fugacity model embedded in the EPI (estimation program interface) Suite TM , provided by the US EPA. The model assumes a steady state condition between the total input and output. The level III model does not require equilibrium between the defined media. The information provided is intended to give the user a general estimate of the environmental fate of this product under the defined conditions of the models. If released into the environment this material is expected to distribute to the air, water and soil/sediment in the approximate respective percentages; <5%, 30 - 50%, > 90%. The portion in water is expected to be soluble or dispersible.

ENVIRONMENTAL HAZARD AND EXPOSURE CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Low

## 13. DISPOSAL CONSIDERATIONS

Dispose of wastes in an approved incinerator or waste treatment/disposal site, in accordance with all applicable regulations. Do not dispose of wastes in local sewer or with normal garbage.

Do not reuse empty container.

## 14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

**LAND TRANSPORT (ADG)**

| | |
|---|---|
| Proper Shipping Name | PRODUCT IS NOT REGULATED DURING TRANSPORTATION |

**AIR TRANSPORT (ICAO/IATA)**

| | |
|---|---|
| Proper Shipping Name | PRODUCT IS NOT REGULATED DURING TRANSPORTATION |

**MARINE TRANSPORT (IMDG/IMO)**

| | |
|---|---|
| Proper Shipping Name | PRODUCT IS NOT REGULATED DURING TRANSPORTATION |

## 15. REGULATORY INFORMATION

**AUSTRALIA:**

Not classified as hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

CLASSIFICATION: This product is not classified as hazardous, however, we recommend the following safety instructions:

SAFETY PHRASES:

| | |
|---|---|
| S24/25 | Avoid contact with skin and eyes. |
| S37/39 | Wear suitable gloves and eye/face protection. |
| S62 | If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. |

NICNAS:

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS) and are listed on the Australian Inventory of Chemical Substances (AICS).

SUSDP SCHEDULE : Not listed

**NEW ZEALAND:**

This product complies with Parts XI - XV of the HSNO Act (1996).

NZ SCHEDULE : Not Listed

**INTERNATIONAL REGULATIONS:**

FOOD AND DRUG ADMINISTRATION (FDA) Federal Food, Drug and Cosmetic Act :
When use situations necessitate compliance with FDA regulations, this product is acceptable under : 21 CFR 176.170 Components of paper and paperboard in contact with aqueous and fatty foods and 21 CFR 176.180 Components of paper and paperboard in contact with dry foods.

**INTERNATIONAL CHEMICAL CONTROL LAWS:**

TOXIC SUBSTANCES CONTROL ACT (TSCA)
The substances in this preparation are included on or exempted from the TSCA 8(b) Inventory (40 CFR 710).

EUROPE
The substances in this preparation have been reviewed for compliance with the EINECS or ELINCS inventories.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA)
The substances in this preparation are listed on the Domestic Substances List (DSL), are exempt, or have been reported in accordance with the New Substances Notification Regulations.

JAPAN
All substances in this product comply with the Law Regulating the Manufacture and Importation Of Chemical Substances and are listed on the Ministry of International Trade & industry List (MITI).

KOREA
All substances in this product comply with the Toxic Chemical Control Law (TCCL) and are listed on the Existing Chemicals List (ECL). This product's trade name is registered with the Korean Ministry of Environment (KMOE).

THE PHILIPPINES
All substances in this product comply with the Republic Act 6969 (RA 6969) and are listed on the Philippine Inventory of Chemicals & Chemical Substances (PICCS).

CHINA
All substances in this product comply with the Chemical Control Law and are listed on the Chemical Inventory of Existing Substances (CIES).

## 16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight(tm) (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By Nalco Asia Pacific SHE, Product Safety Specialist; Ph: (02) 9316 3145
Date issued: 05-Jan-05
Replaces: 01-Sep-03
Reason for issue: Regular update.

PRODUCT

# ULTRION 8588

**EMERGENCY TELEPHONE NUMBER**

**Australia: 1 800 033 111** **New Zealand: 0 800 734 607**

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME ULTRION 8588

APPLICATION : POTABLE COAGULANT

COMPANY IDENTIFICATION :

Nalco Australia Pty Ltd
2 Anderson Street
Botany N.S.W. 2019
Australia
A.B.N. 41 000 424 788
TEL: +61 29 316 3000
FAX: +61 29 666 5292

Nalco New Zealand Ltd
44 Cryers Road
East Tamaki, Auckland
New Zealand

TEL: +649 2745032
FAX: +649 2747924

EMERGENCY TELEPHONE NUMBER(S) :

1 800 033111 (Australia)

0800 734607 (New Zealand)

Date issued : 03-May-05

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC). Consult Section 15 for the nature of the hazard(s).

CHEMICAL DESCRIPTION : Aluminium Salts, Polymer, in aqueous solution

| CHEMICAL NAME | CAS NO | % (w/w) |
|---|---|---|
| Aluminum Hydroxychloride | 1327-41-9 | 10.0 - 30.0 |
| Other ingredients determined not to be hazardous | | to 100% |

## 3. HAZARDS IDENTIFICATION

HUMAN HEALTH HAZARDS - ACUTE

EYE CONTACT
Can cause moderate irritation.

SKIN CONTACT
Can cause mild irritation. Frequent or prolonged contact with product may defat and dry the skin, leading to discomfort and dermatitis.

INGESTION
Not a likely route of exposure. There may be irritation to the gastro-intestinal tract with nausea and vomiting.

INHALATION
Not a likely route of exposure. Aerosols or product mist may irritate the upper respiratory tract.

HUMAN HEALTH HAZARDS - CHRONIC
No adverse effects expected other than those mentioned above.

## 4. FIRST AID MEASURES

EYE CONTACT
Immediately flush eye with water for at least 15 minutes while holding eyelids open. If only one eye is affected be sure to use care not to contaminate the other eye with the run-off. Get medical attention.

SKIN CONTACT
Immediately flush with plenty of water for at least 15 minutes. Contaminated clothing should be removed under running water. Get medical attention.

INGESTION
Get medical attention. Do not induce vomiting without medical advice. If conscious, washout mouth and give water to drink. If reflexive vomiting occurs, rinse mouth and repeat administration of water. Contact the Poison's Information Centre (eg Australia 13 1126; New Zealand 0800 764 766).

INHALATION
Remove to fresh air, treat symptomatically. If symptoms develop, seek medical advice.

NOTE TO PHYSICIAN
Based on the individual reactions of the patient, the physician's judgement should be used to control symptoms and clinical condition.

## 5. FIRE FIGHTING MEASURES

FLASH POINT : None
HAZCHEM CODE: 2X

EXTINGUISHING MEDIA
Not expected to burn. Use extinguishing media appropriate for surrounding fire.

FIRE AND EXPLOSION HAZARD
May evolve oxides of nitrogen (NOx) under fire conditions. May evolve oxides of carbon (COx) under fire conditions. May evolve HCl under fire conditions. Contact with reactive metals (e.g. aluminium) may result in the generation of flammable hydrogen gas.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTING
In case of fire, wear a full face positive-pressure self contained breathing apparatus and protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Stop or reduce any leaks if it is safe to do so. Ventilate spill area if possible. Ensure clean-up is conducted by trained personnel only. Do not touch spilled material. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Notify appropriate government, occupational health and safety and environmental authorities.

METHODS FOR CLEANING UP
SMALL SPILLS: Soak up spill with absorbent material. Place residues in a suitable, covered, properly labeled container. Wash affected area. LARGE SPILLS: Contain liquid using absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Clean contaminated surfaces with water or aqueous cleaning agents. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS
Prevent material from entering sewers or waterways.

## 7. HANDLING AND STORAGE

HANDLING
Do not get in eyes, on skin, on clothing. Do not take internally. Use with adequate ventilation. Ensure all containers are labelled. Keep the containers closed when not in use. Have emergency equipment (for fires, spills, leaks, etc.) readily available. Avoid generating aerosols and mists.

STORAGE CONDITIONS
Store in suitable labelled containers. Store the containers tightly closed. Store separately from bases. Store separately from oxidizers.

SUITABLE CONSTRUCTION MATERIAL
Polyethylene, Polypropylene, Buna-N, Butyl rubber, Viton, Nitrile rubber

UNSUITABLE CONSTRUCTION MATERIAL
Stainless steel, Carbon steel, Copper, Brass, Bronze, Nylon, aluminium

SENSITIVITY TO STATIC DISCHARGE
Not expected to be sensitive to static discharge.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS
The following component(s) have been assigned an exposure standard by NOHSC (Australia) and/or other Agencies:

| OCCUPATIONAL EXPOSURE LIMITS | TWA mg/m3 |
|---|---|
| ACGIH/TLV | |
| ALUMINUM, SOLUBLE SALTS, AS /AL/ | 2 |
| AUSTRALIA | |
| ALUMINIUM, SOLUBLE SALTS, AS AL | 2 |
| NEW ZEALAND | |
| ALUMINIUM, AS AL, SOLUBLE SALTS | 2 |
| OSHA/PEL | |
| ALUMINUM, AS /AL/, SOLUBLE SALTS | 2 |

ENGINEERING MEASURES
General ventilation is recommended. Use local exhaust ventilation if necessary to control airborne mist and vapor.

PERSONAL PROTECTION

GENERAL ADVICE
The use and choice of personal protection equipment is related to the hazard of the product, the workplace and the way the product is handled. In general, we recommend as a minimum precaution that safety glasses with side-shields and workclothes protecting arms, legs and body be used. In addition any person visiting an area where this product is handled should at least wear safety glasses with side-shields.

RESPIRATORY PROTECTION

Respiratory protection is not normally needed. If the occupational exposure limit is likely to be exceeded, an approved respirator must be selected and used in accordance with AS/NZS 1715 and AS/NZS 1716. A dust, mist, fume cartridge may be used. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

HAND PROTECTION
Neoprene gloves Nitrile gloves Breakthrough time not determined as preparation, consult PPE manufacturers.

SKIN PROTECTION
See general advice.

EYE PROTECTION
When handling this product, the use of splash chemical goggles is recommended.

HYGIENE RECOMMENDATIONS
Use good work and personal hygiene practices to avoid exposure. Keep an eye wash fountain available. Keep a safety shower available. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse. Always wash thoroughly after handling chemicals. When handling this product never eat, drink or smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| PHYSICAL STATE | Liquid |
| APPEARANCE | Colorless |
| ODOR | None |
| FLASH POINT | None |
| SPECIFIC GRAVITY | 1.19 - 1.23 @ 23 °C |
| SOLUBILITY IN WATER | Complete |
| pH ( 100% ) | 2 - 3 |
| VOC CONTENT | 0 % Calculated |

Note: These physical properties are typical values for this product and are subject to change.

## 10. STABILITY AND REACTIVITY

STABILITY
Stable under normal conditions. After 24 hours dilute solutions of less than 3% will start to hydrolyse to a white turbid solution.

HAZARDOUS POLYMERIZATION
Hazardous polymerization will not occur.

CONDITIONS TO AVOID
Avoid extremes of temperature.

MATERIALS TO AVOID
Contact with strong oxidizers (e.g. chlorine, peroxides, chromates, nitric acid, perchlorate, concentrated oxygen, permanganate) may generate heat, fires, explosions and/or toxic vapors. Contact with strong alkalies (e.g. ammonia and its solutions, carbonates, sodium hydroxide (caustic), potassium hydroxide, calcium hydroxide (lime), cyanide, sulfide, hypochlorites, chlorites) may generate heat, splattering or boiling and toxic vapors. Contact with reactive metals (e.g. aluminium) may result in the generation of flammable hydrogen gas.

HAZARDOUS DECOMPOSITION PRODUCTS

| | |
|---|---|
| Under fire conditions: | Oxides of nitrogen |
| | Oxides of carbon |
| | HCl |

## 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA :
No toxicity studies have been conducted on this product.

SENSITIZATION :
This product is not expected to be a sensitizer.

CARCINOGENICITY :
None of the substances in this product are listed as carcinogens by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) or the American Conference of Governmental Industrial Hygienists (ACGIH).

HUMAN HAZARD CHARACTERIZATION :
Based on our hazard characterization, the potenairtial human hazard is: Low

## 12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL EFFECTS :

No toxicity studies have been conducted on this product.

ENVIRONMENTAL HAZARD CHARACTERIZATION
Based on our hazard characterization, the potential environmental hazard is: Moderate

## 13. DISPOSAL CONSIDERATIONS

Hazardous wastes must be transported by a licensed hazardous waste transporter and disposed of or treated in a properly licensed hazardous waste treatment, storage, disposal or recycling facility. Consult local, state, and federal regulations for specific requirements.

Empty drums should be taken for recycling, recovery, or disposal through a suitably qualified or licensed contractor.

## 14. TRANSPORT INFORMATION

The information in this section is for reference only and should not take the place of a shipping paper (bill of lading) specific to an order. Please note that the proper Shipping Name / Hazard Class may vary by packaging, properties, and mode of transportation. Typical Proper Shipping Names for this product are as follows.

LAND TRANSPORT (ADG):

| | |
|---|---|
| Proper Shipping Name | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. |
| Technical Name(s) | ALUMINIUM HYDROXYCHLORIDE |
| UN/ID No | UN 3264 |
| Hazard Class - Primary | 8 |
| Packing Group | II |

| | |
|---|---|
| IERG No: | 37 |
| HAZCHEM CODE: | 2X |

Dangerous goods of Class 8 (Acids) are incompatible in a placard load with any of the following:
Class 1 Explosives
Class 4.3 Dangerous when wet substances
Class 5.1 Oxidising agents
Class 5.2 Organic peroxides
Class 6 Cyanides only
Class 7 Radioactive substances
and are incompatible with food or food packaging in any quantity.

AIR TRANSPORT (ICAO/IATA)

| | |
|---|---|
| Proper Shipping Name | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. |
| Technical Name(s) | ALUMINIUM HYDROXYCHLORIDE |
| UN/ID No | UN 3264 |
| Hazard Class - Primary | 8 |
| Packing Group | II |
| IATA Cargo Packing Instructions | 812 |
| IATA Cargo Aircraft Limit | 30 L |
| IATA Passenger Packing Instructions | Y808 / 808 |
| IATA Passenger Aircraft Limit | 0.5 L / 1 L |

MARINE TRANSPORT (IMDG/IMO)

| | |
|---|---|
| Proper Shipping Name | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. |
| Technical Name(s) | ALUMINIUM HYDROXYCHLORIDE |
| UN/ID No | UN 3264 |
| Hazard Class - Primary | 8 |
| Packing Group | II |
| EmS-Nr. | F-A, S-B |

## 15. REGULATORY INFORMATION

**AUSTRALIA:**

Hazardous according to the criteria of the National Occupational Health and Safety Commission (NOHSC).

CLASSIFICATION: IRRITANT / Xi

Contains: Aluminum Hydroxychloride

RISK PHRASES:

R36 Irritating to eyes.

SAFETY PHRASES:

S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S28 After contact with skin, wash immediately with plenty of water.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

General Approval:

The National Health and Medical Research Council approved the use of polydimethyldiallyl ammonium chloride and polyalumium chloride for treatment of drinking water in Australia, subject to certain conditions (NHRMC June 1982, 93rd session pp 19-20 and NHRMC June 79, 88th Session pp17-18).

Ultrion 8588 meets these conditions and is suitable for potable applications when dosed at less than 870 mg/L, and when the level of PAC in the water after treatment does not exceed 20 mg/L.

Polydimethyldiallyl ammonium chloride and polyaluminium chloride have also been approved by the National Food Authority for use as a processing aid used in packaged water and in water used as an ingredient in other foods (NFA Standard A16, Table VI).

NICNAS:

All substances in this product comply with the National Industrial Chemicals Notification & Assessment Scheme (NICNAS).

SUSDP SCHEDULE Not Listed

**NEW ZEALAND:**

This product complies with Parts XI - XV of the HSNO Act (1996).

NZ SCHEDULE Not Listed

**INTERNATIONAL CHEMICAL CONTROL LAWS**

TOXIC SUBSTANCES CONTROL ACT (TSCA)
This product has not been evaluated for TSCA and may contain substances not found on the TSCA 8(b) Inventory List. This product may be used under the TSCA 5(h)(3) Research Exemption if all requirements are met.

## 16. OTHER INFORMATION

This product material safety data sheet provides health and safety information. The product is to be used in applications consistent with our product literature. Individuals handling this product should be informed of the recommended safety precautions and should have access to this information. For any other uses, exposures should be evaluated so that appropriate handling practices and training programs can be established to insure safe workplace operations. Please consult your local sales representative for any further information.

REFERENCES

Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices, American Conference of Governmental Industrial Hygienists, OH., (Ariel Insight(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Hazardous Substances Data Bank, National Library of Medicine, Bethesda, Maryland (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

Integrated Risk Information System, U.S. Environmental Protection Agency, Washington, D.C. (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

Annual Report on Carcinogens, National Toxicology Program, U.S. Department of Health and Human Services, Public Health Service.

Title 29 Code of Federal Regulations, Part 1910, Subpart Z, Toxic and Hazardous Substances, Occupational Safety and Health Administration (OSHA), (Ariel Insight(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

Registry of Toxic Effects of Chemical Substances, National Institute for Occupational Safety and Health, Cincinnati, OH, (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

Ariel Insight(tm) (An integrated guide to industrial chemicals covered under major regulatory and advisory programs), North American Module, Western European Module, Chemical Inventories Module and the Generics Module (Ariel Insight(tm) CD-ROM Version), Ariel Research Corp., Bethesda, MD.

The Teratogen Information System, University of Washington, Seattle, WA (TOMES CPS(tm) CD-ROM Version), Micromedex, Inc., Englewood, CO.

Prepared By Nalco Asia Pacific SHE Regulatory Chemist; (02) 9316 3145
Date issued 03-May-05
Replaces 09-Nov-00
Reason for issue: Regular update

# MATERIAL SAFETY DATA SHEET

**MSDS NO.** 12391 **Trade Name:** PLATINUM PAC* **Revision Date:** 10/25/2007

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Trade Name:** PLATINUM PAC*
**Chemical Family:** Polyanionic cellulose polymer.
**Product Use:** Oil well drilling fluid additive.
**Emergency Telephone (24 hr.):** 281-561-1600

**Supplied by:** M-I L.L.C.
P.O. Box 42842
Houston, TX 77242
www.miswaco.com
**Telephone Number:** 281-561-1512
**Prepared by:** Product Safety Group

**Revision Number:** 3

**HMIS Rating**

**Health:** 1 **Flammability:** 1 **Physical Hazard:** 0 **PPE:** E

**HMIS Key:** 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Caution May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage.

**Canadian Classification:**
**UN PIN No:** Not regulated. **WHMIS Class:** Not a controlled product.

**Physical State:** Powder, dust. **Odor** Odorless **Color:** White to Light Yellow

**Potential Health Effects:**

**Acute Effects**

**Eye Contact:** May cause mechanical irritation
**Skin Contact:** May cause mechanical irritation.
**Inhalation:** May cause mechanical irritation.
**Ingestion:** May cause gastric distress, nausea and vomiting if ingested.

**Carcinogenicity & Chronic Effects:** See Section 11 - Toxicological Information.
**Routes of Exposure:** Eyes. Dermal (skin) contact. Inhalation.
**Target Organs/Medical Conditions Aggravated by Overexposure:** Eyes. Skin. Respiratory System.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient | CAS No. | Wt. % | Comments: |
|---|---|---|---|
| Polyanionic cellulose | | 90 - 100 | No comments. |

## 4. FIRST AID MEASURES

**Eye Contact:** Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**Skin Contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

**General notes:** Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

**Flammable Properties**

**Flash Point: F (C):** NA
**Flammable Limits in Air - Lower (%):** ND
**Flammable Limits in Air - Upper (%):** ND
**Autoignition Temperature: F (C):** ND
**Flammability Class:** NA
**Other Flammable Properties:** Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air.
**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Protection Of Fire-Fighters:**

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Oxides of: Carbon.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

**Spill Procedures:** Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Environmental Precautions:** Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

**Handling:** Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.

**Storage:** Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits (TLV & PEL - 8H TWA):**

| Ingredient | CAS No. | Wt. % | ACGIH TLV | OSHA PEL | Other | Notes |
|---|---|---|---|---|---|---|
| Polyanionic cellulose | | 90 - 100 | NA | NA | NA | (1) |

**Notes**
(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m$^3$ (Inhalable); 3 mg/m$^3$ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m$^3$ (Total); 5 mg/m$^3$ (Respirable).

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

**Personal Protection Equipment**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Not normally necessary. If needed to minimize irritation: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Nitrile. Neoprene.

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Color:** White to Light Yellow
**Odor** Odorless
**Physical State:** Powder, dust.
**pH:** 6.0 - 8.5 (1% solution)
**Specific Gravity (H2O = 1):** 0.3 - 0.5
**Solubility (Water):** Soluble
**Flash Point: F (C):** NA
**Melting/Freezing Point:** ND
**Boiling Point:** ND
**Vapor Pressure:** NA
**Vapor Density (Air=1):** NA
**Evaporation Rate:** NA
**Odor Threshold(s):** ND

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable

## 10. STABILITY AND REACTIVITY

**Conditions to Avoid:** Keep away from heat, sparks and flame.
**Materials to Avoid:** Oxidizers.
**Hazardous Decomposition Products:** For thermal decomposition products, see Section 5.
**Hazardous Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

| Ingredient | CAS No. | Acute Data |
|---|---|---|
| Polyanionic cellulose | | Oral LD50: 27000 mg/kg (rat); Dermal LD50: >2000 mg/kg (rabbit); LC50: >5800 mg/m$^3$/4H (rat) |

| Ingredient | Component Toxicological Summary |
|---|---|
| Polyanionic cellulose | Rats fed diets containing 2.5, 5 and 10% of this component for 3 months demonstrated some kidney effects. Effects were believed to be related to high sodium content of diet. (Food Chem. Toxicol.) |

**Product Toxicological Information:**
Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## 12. ECOLOGICAL INFORMATION

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

**Biodegration:** ND
**Bioaccumulation:** ND
**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** This product does not meet the criteria of a hazardous waste if discarded in its purchased form.

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

**U.S. DOT Shipping Description:** Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

**Canada TDG Shipping Description:** Not regulated.
**UN PIN No:** Not regulated.

**IMDG Shipping Description:** Not regulated.

**ICAO/IATA Shipping Description:** Not regulated.

## 15. REGULATORY INFORMATION

**U.S. Federal and State Regulations**

**SARA 311/312 Hazard Catagories:** Not a SARA 311/312 hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

**International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
European Union EINECS/ELINCS - Components are listed or exempt from listing.
apan METI ENCS - Components are listed or exempt from listing.
Korea TCCL ECL - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

**Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** Not a controlled product.

## 16. OTHER INFORMATION

**The following sections have been revised:** 1, 16

**NA - Not Applicable, ND - Not Determined.**

*A mark of M-I L.L.C.

**Disclaimer:**
MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user s risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# MATERIAL SAFETY DATA SHEET

**MSDS NO.** 10068 **Trade Name:** POLY-PLUS* RD **Revision Date:** 09/25/2006

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Trade Name:** POLY-PLUS* RD
**Chemical Family:** Acrylamide polymer.
**Product Use:** Oil well drilling fluid additive.
**Emergency Telephone (24 hr.):** 281-561-1600

**Supplied by:** M-I L.L.C.
P.O. Box 42842
Houston, TX 77242
www.miswaco.com
**Telephone Number:** 281-561-1512
**Contact Person:** oanne Galvan, Sr. Product Safety Specialist

**Revision Number:** 4

**HMIS Rating**
**Health:** 1 **Flammability:** 1 **Physical Hazard:** 0 **PPE:** E

**HMIS Key:** 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. *Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Caution May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage.

**Canadian Classification:**
**UN PIN No:** Not regulated. **WHMIS Class:** Not a controlled product.

**Physical State:** Powder. **Odor:** Odorless **Color:** White

**Potential Health Effects:**

**Acute Effects**

**Eye Contact:** May cause mechanical irritation
**Skin Contact:** May cause mechanical irritation.
**Inhalation:** May cause mechanical irritation.
**Ingestion:** May cause gastric distress, nausea and vomiting if ingested.

**Acute Effects Note:** This product may release ammonia or amines when heated or exposed to high pH. Ammonia is a severe eye, skin and respiratory irritant. Ammonia has a very strong odor and can be detected at levels as low as 5 ppm. Many amines are also eye, skin and respiratory irritants.

**Carcinogenicity & Chronic Effects:** See Section 11 - Toxicological Information.
**Routes of Exposure:** Eyes. Dermal (skin) contact. Inhalation.
**Target Organs/Medical Conditions Aggravated by Overexposure:** Eyes. Skin. Respiratory System.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient | CAS No. | Wt. % | Comments: |
|---|---|---|---|
| Anionic acrylamide copolymer | | 90 - 100 | No comments. |

## 4. FIRST AID MEASURES

**Eye Contact:** Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**Skin Contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

**General Notes:** Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

**Flammable Properties**

**Flash Point: F (C):** NA
**Flammable Limits in Air - Lower (%):** ND
**Flammable Limits in Air - Upper (%):** ND
**Autoignition Temperature: F (C):** ND
**Flammability Class:** NA
**Other Flammable Properties:** Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air.
**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Protection Of Fire-Fighters:**

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Ammonia or amines. Oxides of: Carbon. Nitrogen.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

**Spill Procedures:** Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Environmental Precautions:** Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

**Handling:** Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.

**Storage:** Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits (TLV & PEL - 8H TWA):**

| Ingredient | CAS No. | Wt. % | ACGIH TLV | OSHA PEL | Other | Notes |
|---|---|---|---|---|---|---|
| Anionic acrylamide copolymer | | 90 - 100 | NA | NA | NA | (1) (6) |

**Notes**
(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m$^3$ (Inhalable); 3 mg/m$^3$ (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m$^3$ (Total); 5 mg/m$^3$ (Respirable).
(6) Ammonia or amines may be released when this component is heated or exposed to high pH. The recommended exposure limits for ammonia are ACGIH TLV 25 ppm and OSHA PEL 50 ppm. No general recommended exposure limit is available for amines. A NIOSH/MSHA approved respirator with ammonia/methylamine cartridges should be used to protect against ammonia or amine inhalation exposure.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

**Personal Protection Equipment**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Not normally necessary. If needed to minimize irritation: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Nitrile. Neoprene.

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Color:** White
**Odor:** Odorless
**Physical State:** Powder.
**pH:** 7.7 (1% solution)
**Specific Gravity (H2O = 1):** 1.25 - 1.40 at 68F (20C)
**Solubility (Water):** Soluble
**Melting/Freezing Point:** ND
**Boiling Point:** ND
**Vapor Pressure:** NA
**Vapor Density (Air=1):** NA
**Evaporation Rate:** NA
**Odor Threshold(s):** ND

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable
**Conditions to Avoid:** Heat. Moisture.
**Materials to Avoid:** Oxidizers.
**Hazardous Decomposition Products:** For thermal decomposition products, see Section 5.
**Hazardous Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

| Ingredient | CAS No. | Acute Data |
|---|---|---|
| Anionic acrylamide copolymer | | Oral LD50: Estimated >2000 mg/kg (rat) |

**Product Toxicological Information:**
Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

This product may contain trace amounts of acrylamide (< 0.1%). Acrylamide has been classified by the International Agency for Research on Cancer (IARC) as a Group 2A carcinogen (probably carcinogenic to humans) and a suspect carcinogen by the National Toxicology Program (NTP). (LOLI)

## 12. ECOLOGICAL INFORMATION

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

**Biodegration:** ND
**Bioaccumulation:** ND
**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** ND

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

**U.S. DOT Shipping Description:** Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

**Canada TDG Shipping Description:** Not regulated.
**UN PIN No:** Not regulated.

**IMDG Shipping Description:** Not regulated.

**ICAO/IATA Shipping Description:** Not regulated.

## 15. REGULATORY INFORMATION

**U.S. Federal and State Regulations**

**SARA 311/312 Hazard Catagories:** Not a SARA 311/312 hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

**International Chemical Inventories**

Australia AICS - Components are listed or exempt from listing.
Canada DSL - Components are listed or exempt from listing.
China Inventory - Components are listed or exempt from listing.
European Union EINECS/ELINCS - Components are listed or exempt from listing.
apan METI ENCS - Components are listed or exempt from listing.
Korea TCCL ECL - Components are listed or exempt from listing.
Philippine PICCS - Components are listed or exempt from listing.
U.S. TSCA - Components are listed or exempt from listing.
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

**Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** Not a controlled product.

## 16. OTHER INFORMATION

**The following sections have been revised:** 1, 2, 3, 8, 11, 15, 16

**NA - Not Applicable, ND - Not Determined.**

*A mark of M-I L.L.C.

**Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user s risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guartantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# POTASSIUM CHLORIDE



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**

POTASSIUM CHLORIDE

**SYNONYMS**

"Kay Ciel Elixir", "KCl for refillable electrodes", chloropotassuril, potavescent, "dipotassium dichloride", slow-K, span-K, rekawan, sylvite, "emplets potassium chloride", enseal, "tripotassium trichloride", kalitabs, "potassium monochloride", kaochlor, "Crop King", "Muriate of Potash", kaon-Cl, "kaon-Cl 10", "kaon-Cl tabs", k-lor, klotrix, k-lyte/Cl, k-predne-dome, "Food Additive 508", "Product Code: EZ960V", "Pivot Muriate of Potash, ", "Sylvite, ", "Potassium Chloride, Potash", "Merck Potassium chloride AnalaR 10198"

**PRODUCT USE**

Fertilizer, source of potassium salts, pharmaceutical preparations, photography, spectroscopy, buffer solutions. Mill addition in porcelain enamels. Substitute for common salt. As Food additive 508. Medically as Slow- K for potassium deficiency. For the treatment and prophylaxis of hypokalemia Available as Technical, Pure, Food and BP grades.

**SUPPLIER**

Company: APS Polymers & Additives
AUS Telephone: +61 2 9839 4000

Company: Accensi Pty Ltd
AUS Telephone: +61 7 3897 2000

Company: Ajax Chem.(Qld. Chemical & Dist. Co.)

Company: Australian Chemical Reagents Pty Ltd
AUS Telephone: +61 7 3848 4828

Company: Australian Pharmaceutical Partners Pty Ltd
AUS Telephone: +61 2 9452 6566

Company: Chem- Supply Pty Ltd
AUS Telephone: +61 2 8440 2000

Company: Incitec Pivot Ltd
AUS Emergency Tel: 1800 333 197

Company: Merck Pty Ltd
AUS Emergency Tel: +61 3 9728 5855

Company: Pool Resources Pty Ltd
AUS Telephone: +61 8 8359 4448

Company: Redox Pty Ltd
AUS Telephone: +61 2 9733 3000

Company: APS Specialty Chemicals
AUS Telephone: +61 02 9839 4000

Company: Ace Chemical Company
AUS Telephone: +61 8 8376 0844

Company: Ajax Finechem
AUS Telephone: +61 2 9524 7744

Company: Australian Mud Company Ltd
AUS Telephone: +61 8 9445 4000

Company: Bio Lab
AUS Telephone: 61 3 9263 4300

Company: Fronine Laboratory Supplies Pty Ltd
AUS Telephone: +61 2 9627 3600

Company: MP Biomedicals Pty Ltd
AUS Emergency Tel: +61 2 9838 7422

Company: Orica
AUS Emergency Tel: +1800 033 111 (All Hours)

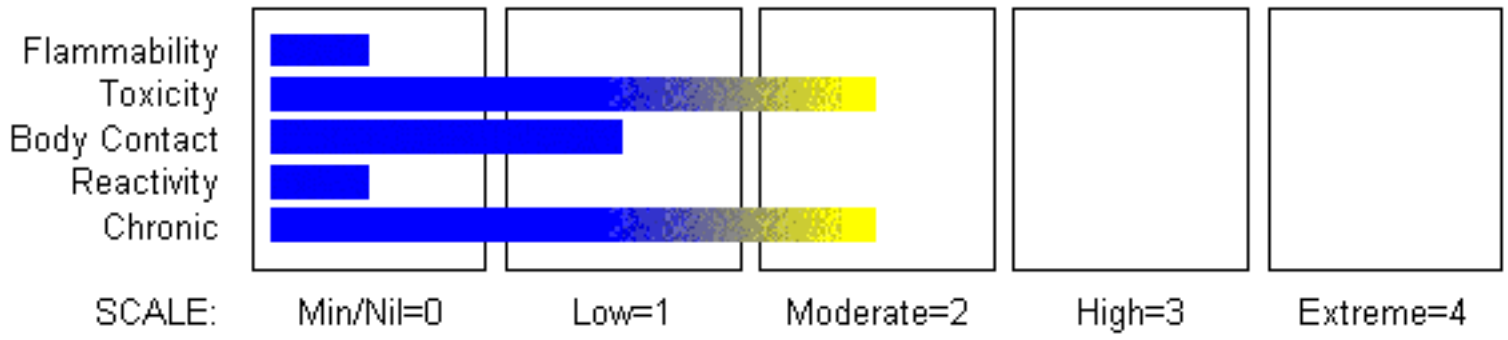
Company: Radiometer Copenhagen
AUS Telephone: +61 3 9259 2222

Company: Rheochem Ltd
AUS Emergency Tel: +61 408 608 569

Refer to Chemwatch Supplier List for further contact details.

**continued...**

## CHEMWATCH HAZARD RATINGS




## Section 2 - HAZARDS IDENTIFICATION

### STATEMENT OF HAZARDOUS NATURE

NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

### POISONS SCHEDULE

None

RISK
Repeated exposure may cause skin dryness and cracking.
Ingestion may produce health damage*.
Cumulative effects may result following exposure*.
* (limited evidence).

SAFETY
Do not breathe dust.

Take off immediately all contaminated clothing.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| potassium chloride | 7447-40-7 | >99 |

## Section 4 - FIRST AID MEASURES

### SWALLOWED

· If swallowed do NOT induce vomiting.
· If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
· Observe the patient carefully.
· Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
· Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
· Seek medical advice.

### EYE

If this product comes in contact with the eyes:
· Wash out immediately with fresh running water.
· Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

**continued...**

· If pain persists or recurs seek medical attention.
· Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**

If skin or hair contact occurs:
· Flush skin and hair with running water (and soap if available).
· Seek medical attention in event of irritation.

**INHALED**

· If dust is inhaled, remove from contaminated area.
· Encourage patient to blow nose to ensure clear breathing passages.
· Ask patient to rinse mouth with water but to not drink water.
· Seek immediate medical attention.

**NOTES TO PHYSICIAN**

For potassium intoxications:
· Hyperkalaemia, in patients with abnormal renal function, results from reduced renal excretion following intoxication.
· The presence of electrocardiographic evidence of hyperkalemia or serum potassium levels exceeding 7.5 mE/L indicates a medical emergency requiring an intravenous line and constant cardiac monitoring.
· The intravenous ingestion of 5-10 ml of 10% calcium gluconate, in adults, over a 2 minute period antagonises the cardiac and neuromuscular effects. The duration of action is approximately 1 hour. [Ellenhorn and Barceloux: Medical Toxicology].

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**

· There is no restriction on the type of extinguisher which may be used.
· Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**

· Alert Fire Brigade and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves for fire only.
· Prevent, by any means available, spillage from entering drains or water courses.
· Use fire fighting procedures suitable for surrounding area.
· DO NOT approach containers suspected to be hot.
· Cool fire exposed containers with water spray from a protected location.
· If safe to do so, remove containers from path of fire.
· Equipment should be thoroughly decontaminated after use.

**FIRE/EXPLOSION HAZARD**

· Non combustible.
· Not considered a significant fire risk, however containers may burn.

Decomposition may produce toxic fumes of: hydrogen chloride, metal oxides.
May emit poisonous fumes.

**FIRE INCOMPATIBILITY**

None known.

**HAZCHEM: None**

**continued...**

## Section 6 - ACCIDENTAL RELEASE MEASURES

### EMERGENCY PROCEDURES

#### MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable labelled container for waste disposal.

#### MAJOR SPILLS

Moderate hazard.

· CAUTION: Advise personnel in area.
· Alert Emergency Services and tell them location and nature of hazard.
· Control personal contact by wearing protective clothing.
· Prevent, by any means available, spillage from entering drains or water courses.
· Recover product wherever possible.
· IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal.
· ALWAYS: Wash area down with large amounts of water and prevent runoff into drains.
· If contamination of drains or waterways occurs, advise Emergency Services.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.
· Use in a well-ventilated area.
· Prevent concentration in hollows and sumps.
· DO NOT enter confined spaces until atmosphere has been checked.
· DO NOT allow material to contact humans, exposed food or food utensils.
· Avoid contact with incompatible materials.
· When handling, DO NOT eat, drink or smoke.
· Keep containers securely sealed when not in use.
· Avoid physical damage to containers.
· Always wash hands with soap and water after handling.
· Work clothes should be laundered separately. Launder contaminated clothing before re-use.
· Use good occupational work practice.
· Observe manufacturer's storing and handling recommendations.
· Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### SUITABLE CONTAINER

· Glass container is suitable for laboratory quantities.
· Polyethylene or polypropylene container.
· Check all containers are clearly labelled and free from leaks.

**continued...**

## STORAGE INCOMPATIBILITY

· Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
· These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
· The state of subdivision may affect the results.
Avoid reaction with bromine trifluoride; potassium permanganate, plus sulfuric acid.

## STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

## SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

| | | | | | |
|---|---|---|---|---|---|
| + | + | + | + | - | + |

+: *May be stored together*
O: *May be stored together with specific preventions*
X: *Must not be stored together*

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

## EXPOSURE CONTROLS

| Source | Material | TWA mg/m³ |
|---|---|---|
| Australia Exposure Standards | potassium chloride (Inspirable dust (not otherwise classified)) | 10 |

## MATERIAL DATA

It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.
At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.
NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

## PERSONAL PROTECTION

**continued...**



**EYE**

· Safety glasses with side shields
· Chemical goggles.
· Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**

Suitability and durability of glove type is dependent on usage. Factors such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity,
are important in the selection of gloves.
Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
· polychloroprene
· nitrile rubber
· butyl rubber
· fluorocaoutchouc
· polyvinyl chloride
Gloves should be examined for wear and/ or degradation constantly.

**OTHER**

· Overalls.
· P.V.C. apron.
· Barrier cream.
· Skin cleansing cream.
· Eye wash unit.

· Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
· The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure.
· Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory . These may be government mandated or vendor recommended.
· Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.

**continued...**

· Use approved positive flow mask if significant quantities of dust becomes airborne.
· Try to avoid creating dust conditions.

**RESPIRATOR**

| Protection Factor | Half- Face Respirator | Full- Face Respirator | Powered Air Respirator |
|---|---|---|---|
| 10 x ES | P1 Air- line* | - - | PAPR- P1 - |
| 50 x ES | Air- line** | P2 | PAPR- P2 |
| 100 x ES | - | P3 | - |
| | | Air- line* | - |
| 100+ x ES | - | Air- line** | PAPR- P3 |

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

**ENGINEERING CONTROLS**

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
· If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.
Such protection might consist of:
(a): particle dust respirators, if necessary, combined with an absorption cartridge;
(b): filter respirators with absorption cartridge or canister of the right type;
(c): fresh-air hoods or masks.
Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

| Type of Contaminant: | Air Speed: |
|---|---|
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1- 2.5 m/s (200- 500 f/min.) |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5- 10 m/s (500- 2000 f/min.) |

Within each range the appropriate value depends on:

| Lower end of the range | Upper end of the range |
|---|---|
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity |
| 3: Intermittent, low production. | 3: High production, heavy use |
| 4: Large hood or large air mass in motion | 4: Small hood- local control only |

**continued...**

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Colourless or white, odourless crystals or crystalline powder with a strong saline taste.
Soluble in water (26%), slightly soluble in alcohol.
Insoluble in ether and acetone.

### PHYSICAL PROPERTIES

Solid.
Mixes with water.

Molecular Weight: 74.55
Melting Range (°C): 773
Solubility in water (g/L): Miscible
pH (1% solution): 7
Volatile Component (%vol): Not applicable
Relative Vapour Density (air=1): Not Applicable
Lower Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not applicable
State: Divided solid

Boiling Range (°C): Sublimes at 1500
Specific Gravity (water=1): 1.987
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not applicable
Evaporation Rate: Not applicable
Flash Point (°C): Not Applicable

Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C): Sublimes @ 1500
Viscosity: Not Applicable

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

### ACUTE HEALTH EFFECTS

#### SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.
Use as a food additive indicates good tolerance of small amounts, but excessive amounts or overuse may bring irritant and/or harmful effects.
Acute potassium poisoning after swallowing is rare, because vomiting usually occurs and renal excretion is fast. Potassium causes a slow, weak pulse, irregularities in heart

**continued...**

rhythm, heart block and an eventual fall in blood pressure. Breathing initially becomes faster but the muscles of breathing eventually become paralysed. There can be loss of appetite, extreme thirst, increased volumes of urine, fever, convulsions and gastric disturbances; death may then occur due to failure of breathing and inflammation of the stomach and bowel.

**EYE**
Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

**SKIN**
The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
Irritation and skin reactions are possible with sensitive skin.
Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

**INHALED**
The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

**CHRONIC HEALTH EFFECTS**
Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.
Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray.

**TOXICITY AND IRRITATION**
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

| TOXICITY | IRRITATION |
|---|---|
| Oral (man) LDLo: 20 mg/kg | Eye (rabbit): 500 mg/24h - Mild |
| Oral (woman) TDLo: 60 mg/kg | |
| Oral (rat) LD50: 2600 mg/kg | |

The material may be irritating to the eye, with prolonged contact causing inflammation.
Repeated or prolonged exposure to irritants may produce conjunctivitis.
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**continued...**

## Section 12 - ECOLOGICAL INFORMATION

Although inorganic chloride ions are not normally considered toxic they can exist in effluents at acutely toxic levels (chloride >3000 mg/l). the resulting salinity can exceed the tolerances of most freshwater organisms.
Inorganic chlorine eventually finds its way into the aqueous compartment and as such is bioavailable. Incidental exposure to inorganic chloride may occur in occupational settings where chemicals management policies are improperly applied. The toxicity of chloride salts depends on the counter-ion (cation) present; that of chloride itself is unknown. Chloride toxicity has not been observed in humans except in the special case of impaired sodium chloride metabolism, e.g. in congestive heart failure . Healthy individuals can tolerate the intake of large quantities of chloride provided that there is a concomitant intake of fresh water.
Although excessive intake of drinking-water containing sodium chloride at concentrations above 2.5 g/litre has been reported to produce hypertension, this effect is believed to be related to the sodium ion concentration.
Chloride concentrations in excess of about 250 mg/litre can give rise to detectable taste in water, but the threshold depends upon the associated cations. Consumers can, however, become accustomed to concentrations in excess of 250 mg/litre. No health-based guideline value is proposed for chloride in drinking-water.
In humans, 88% of chloride is extracellular and contributes to the osmotic activity of body fluids. The electrolyte balance in the body is maintained by adjusting total dietary intake and by excretion via the kidneys and gastrointestinal tract. Chloride is almost completely absorbed in normal individuals, mostly from the proximal half of the small intestine. Normal fluid loss amounts to about 1.5?2 liters/day, together with about 4 g of chloride per day. Most (90 - 95%) is excreted in the urine, with minor amounts in faeces (4- %) and sweat (2%)
Chloride increases the electrical conductivity of water and thus increases its corrosivity. In metal pipes, chloride reacts with metal ions to form soluble salts thus increasing levels of metals in drinking-water. In lead pipes, a protective oxide layer is built up, but chloride enhances galvanic corrosion. It can also increase the rate of pitting corrosion of metal pipes.
DO NOT discharge into sewer or waterways.

## Section 13 - DISPOSAL CONSIDERATIONS

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction,
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
· DO NOT allow wash water from cleaning or process equipment to enter drains.
· It may be necessary to collect all wash water for treatment before disposal.
· In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
· Where in doubt contact the responsible authority.
· Recycle wherever possible or consult manufacturer for recycling options.
· Consult State Land Waste Management Authority for disposal.

**continued...**

- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

**POISONS SCHEDULE: None**

**REGULATIONS**

potassium chloride (CAS:7447-40-7) is found on the following regulatory lists;
Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - Inorganic chemicals)
Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)
Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality
Australia Exposure Standards
Australia High Volume Industrial Chemical List (HVICL)
Australia Inventory of Chemical Substances (AICS)
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP
GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships
IMO Provisional Categorization of Liquid Substances - List 1: Pure or technically pure products
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals
WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established

## Section 16 - OTHER INFORMATION

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.



Issue Date: 21-Feb-2008
Print Date: 14-Jul-2008

# sodium acid pyrophosphate

**Hazard Alert Code: MODERATE**



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**
sodium acid pyrophosphate

**SYNONYMS**
H2-O7-P2-Na2, Na2-H2-P2-O7, "pyrophosphoric acid, disodium salt", "diphosphoric acid, disodium salt", "disodium dihydrogen pyrophosphate", "disodium diphosphate", "disodium pyrophosphate", "sodium pyrophosphate", "pyrophosphate acid, disodium salt", SAPP-X, "Ikon Chemicals sodium acid pyrophosphate"

**PRODUCT USE**
Metal cleaning and phosphatising, electroplating, drilling muds, baking powders and leavening agent, buffer, sequestrant, peptising agent in cheese and meat products, frozen desserts.

**SUPPLIER**

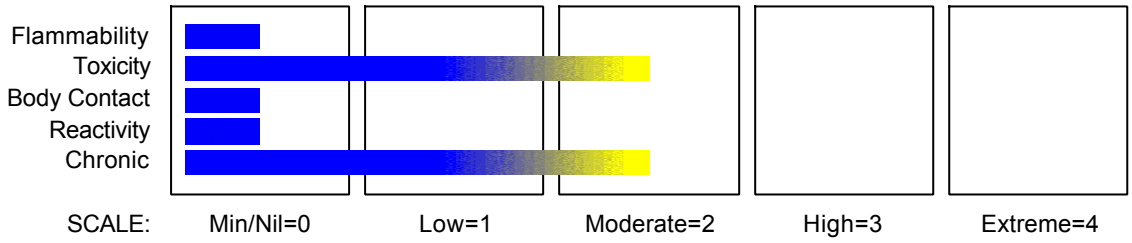
Company: AMC
Address:
5 Pitino Court
Osborne Park
WA, 6017
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

Company: AMC
Address:
PO Box 1141
Osborne Park
WA, 6916
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**
NON-HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.

**CHEMWATCH HAZARD RATINGS**




RISK
■ May cause long- term adverse effects in the aquatic environment.

SAFETY
• Do not breathe dust.
• Avoid contact with skin.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| sodium acid pyrophosphate | 7758-16-9 | > 98 |

**continued...**

## Section 4 - FIRST AID MEASURES

**SWALLOWED**
• If swallowed do NOT induce vomiting.
• If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
• Observe the patient carefully.
• Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

**EYE**
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**
■ If skin or hair contact occurs:
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

**INHALED**
• If fumes or combustion products are inhaled remove from contaminated area.
• Other measures are usually unnecessary.

**NOTES TO PHYSICIAN**
■ Treat symptomatically.

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**
• There is no restriction on the type of extinguisher which may be used.
• Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves for fire only.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use fire fighting procedures suitable for surrounding area.

**FIRE/EXPLOSION HAZARD**
• Non combustible.
• Not considered a significant fire risk, however containers may burn.
Decomposition may produce toxic fumes of: phosphorus oxides (POx), metal oxides.
May emit poisonous fumes.

**FIRE INCOMPATIBILITY**
■ None known.

**HAZCHEM**
None

**PERSONAL PROTECTION**
Glasses:
Chemical goggles.

Respirator:
Particulate

## Section 6 - ACCIDENTAL RELEASE MEASURES

**MINOR SPILLS**
• Remove all ignition sources.
• Clean up all spills immediately.
• Avoid contact with skin and eyes.
• Control personal contact by using protective equipment.

continued...

**MAJOR SPILLS**

■ Moderate hazard.
• CAUTION: Advise personnel in area.
• Alert Emergency Services and tell them location and nature of hazard.
• Control personal contact by wearing protective clothing.
• Prevent, by any means available, spillage from entering drains or water courses.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**

• Avoid all personal contact, including inhalation.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Prevent concentration in hollows and sumps.

**SUITABLE CONTAINER**

• Glass container is suitable for laboratory quantities.
• Polyethylene or polypropylene container.
• Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**

• Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
• These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
• The state of subdivision may affect the results.
• Reacts with metals producing flammable / explosive hydrogen gas.
• Phosphates are incompatible with oxidising and reducing agents.
• Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides.
• Partial oxidation of phosphates by oxidizing agents may result in the release of toxic phosphorus oxides.
Food grade materials must be protected from all possible contaminants.
• Avoid strong bases.
Avoid storage with magnesium.

**STORAGE REQUIREMENTS**

• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry, well-ventilated area.
• Store away from incompatible materials and foodstuff containers.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE CONTROLS**

The following materials had no OELs on our records
• sodium acid pyrophosphate: CAS:7758- 16- 9

**PERSONAL PROTECTION**



**RESPIRATOR**

Particulate

**EYE**

• Safety glasses with side shields
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and

continued...

adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
• frequency and duration of contact,
• chemical resistance of glove material,
• glove thickness and
• dexterity.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
• polychloroprene
• nitrile rubber
• butyl rubber
• fluorocaoutchouc.

**OTHER**

• Overalls.
• P.V.C. apron.
• Barrier cream.
• Skin cleansing cream.

**ENGINEERING CONTROLS**

• Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
• If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.

Such protection might consist of:
(a): particle dust respirators, if necessary, combined with an absorption cartridge;
(b): filter respirators with absorption cartridge or canister of the right type;
(c): fresh-air hoods or masks.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**

Odourless white crystalline powder. Soluble in water (12.5%). Insoluble in alcohol and ammonia.

**PHYSICAL PROPERTIES**

Solid.
Mixes with water.

| | | | |
|---|---|---|---|
| State | Divided solid | Molecular Weight | 221.94 |
| Melting Range (°C) | 232 (Decomposes) | Viscosity | Not Applicable |
| Boiling Range (°C) | Not applicable. | Solubility in water (g/L) | Miscible |
| Flash Point (°C) | Not applicable | pH (1% solution) | 4.2 |
| Decomposition Temp (°C) | Not available. | pH (as supplied) | Not applicable |
| Autoignition Temp (°C) | Not applicable | Vapour Pressure (kPa) | Not applicable. |
| Upper Explosive Limit (%) | Not applicable | Specific Gravity (water=1) | 1.86 |
| Lower Explosive Limit (%) | Not applicable | Relative Vapour Density (air=1) | Not applicable |
| Volatile Component (%vol) | Not applicable. | Evaporation Rate | Not applicable |

## Section 10 - STABILITY AND REACTIVITY

**CONDITIONS CONTRIBUTING TO INSTABILITY**

• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.

*For incompatible materials - refer to Section 7 - Handling and Storage.*

continued...

## Section 11 - TOXICOLOGICAL INFORMATION

**POTENTIAL HEALTH EFFECTS**

ACUTE HEALTH EFFECTS
■ Ingestion may produce health damage*.
■ * (limited evidence).

CHRONIC HEALTH EFFECTS
■ Cumulative effects may result following exposure*.
■ * (limited evidence).

**TOXICITY AND IRRITATION**

SODIUM ACID PYROPHOSPHATE:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY
Oral (rat) LD50: 3600 mg/kg
Dermal (rabbit) LD50: >7940 mg/kg practically non- irritating

IRRITATION
Skin (rabbit): 0.0/8.0

Eye (rabbit): 16.0/110.0
moderately irritating
[CCOHS, Trade Names]

## Section 12 - ECOLOGICAL INFORMATION

May cause long-term adverse effects in the aquatic environment.

## Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.
A Hierarchy of Controls seems to be common - the user should investigate:
• Reduction.
• DO NOT allow wash water from cleaning or process equipment to enter drains.
• It may be necessary to collect all wash water for treatment before disposal.
• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
• Where in doubt contact the responsible authority.
• Recycle wherever possible or consult manufacturer for recycling options.
• Consult State Land Waste Management Authority for disposal.
• Bury residue in an authorised landfill.
• Recycle containers if possible, or dispose of in an authorised landfill.

## Section 14 - TRANSPORTATION INFORMATION

**HAZCHEM:**
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

**REGULATIONS**

**sodium acid pyrophosphate (CAS: 7758-16-9) is found on the following regulatory lists;**
"Australia Inventory of Chemical Substances (AICS)","OECD Representative List of High Production Volume (HPV) Chemicals"

**continued...**

## Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.



Issue Date: 13-Nov-2009
Print Date: 10-Feb-2011

*This is the end of the MSDS.*

# sodium carbonate



## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME**
sodium carbonate

**SYNONYMS**
Na2CO3, "soda ash light", "carbonic acid disodium salt", "soda ash dense", "crystol carbonate", "disodium carbonate", Trona, brysodash, soda(calcined), "calcined soda", DSA, "washing soda", Deltrex, Best, "Redox SOCARB50", "Merck sodium carbonate anhydrous AnalaR 10240", "sodium carbonate, anhydrous AnalaR", "Ikon Dense Soda Ash"

**PRODUCT USE**
Manufacture of sodium salts, glass, builder in soaps, detergents, cleaners. As a water softener; in photography; in textile bleaches; in pulp and paper manufacture; aluminium production; petroleum refining; sealing ponds from leakage; coal liquefaction catalyst; food additive.

**SUPPLIER**

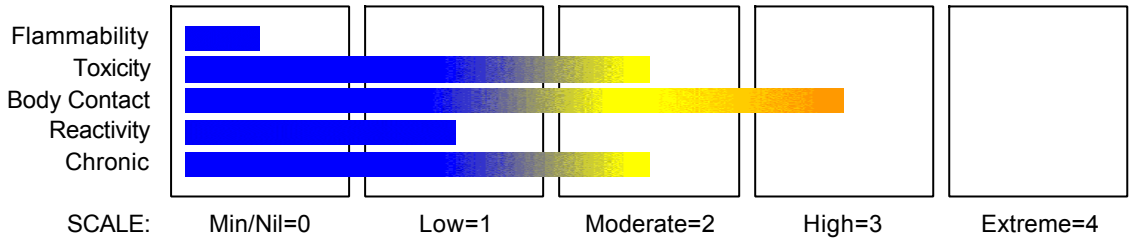
Company: AMC
Address:
5 Pitino Court
Osborne Park
WA, 6017
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

Company: AMC
Address:
PO Box 1141
Osborne Park
WA, 6916
Australia
Telephone: +61 8 9445 4000
Emergency Tel:**+61 400 966 951**
Fax: +61 8 9445 4040

## Section 2 - HAZARDS IDENTIFICATION

**STATEMENT OF HAZARDOUS NATURE**
**HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to NOHSC Criteria, and ADG Code.**

**CHEMWATCH HAZARD RATINGS**




RISK
■ Harmful by inhalation.
■ Irritating to eyes, respiratory system and skin.

SAFETY
• Do not breathe dust.
• Avoid contact with eyes.

• Wear suitable protective clothing.
• Use only in well ventilated areas.
• Keep container in a well ventilated place.

**continued...**

• To clean the floor and all objects contaminated by this material, use water.
• Keep away from food, drink and animal feeding stuffs.
• In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
• If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME | CAS RN | % |
|---|---|---|
| sodium carbonate | 497-19-8 | > 99 |

## Section 4 - FIRST AID MEASURES

**SWALLOWED**
• Immediately give a glass of water.
• First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**EYE**
■ If this product comes in contact with the eyes:
• Wash out immediately with fresh running water.
• Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
• Seek medical attention without delay; if pain persists or recurs seek medical attention.
• Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**
■ If skin contact occurs:
• Immediately remove all contaminated clothing, including footwear.
• Flush skin and hair with running water (and soap if available).
• Seek medical attention in event of irritation.

**INHALED**
• If fumes or combustion products are inhaled remove from contaminated area.
• Lay patient down. Keep warm and rested.
• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
• Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

**NOTES TO PHYSICIAN**
■ For acute or short-term repeated exposures to highly alkaline materials:
• Respiratory stress is uncommon but present occasionally because of soft tissue edema.
• Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
• Oxygen is given as indicated.
• The presence of shock suggests perforation and mandates an intravenous line and fluid administration.

## Section 5 - FIRE FIGHTING MEASURES

**EXTINGUISHING MEDIA**
• There is no restriction on the type of extinguisher which may be used.
• Use extinguishing media suitable for surrounding area.

**FIRE FIGHTING**
• Alert Fire Brigade and tell them location and nature of hazard.
• Wear breathing apparatus plus protective gloves for fire only.
• Prevent, by any means available, spillage from entering drains or water courses.
• Use fire fighting procedures suitable for surrounding area.

**FIRE/EXPLOSION HAZARD**
• Non combustible.
• Not considered a significant fire risk, however containers may burn.

**continued...**

Decomposes on heating and produces acrid and toxic fumes of: carbon monoxide (CO), carbon dioxide (CO2), metal oxides.
May emit poisonous fumes.
May emit corrosive fumes.

**FIRE INCOMPATIBILITY**
• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

**HAZCHEM**
None

**Personal Protective Equipment**
Gloves, boots (chemical resistant).
Breathing apparatus.

## Section 6 - ACCIDENTAL RELEASE MEASURES

**MINOR SPILLS**
• Remove all ignition sources.
• Clean up all spills immediately.
• Avoid contact with skin and eyes.
• Control personal contact by using protective equipment.

**MAJOR SPILLS**
■ Moderate hazard.
• CAUTION: Advise personnel in area.
• Alert Emergency Services and tell them location and nature of hazard.
• Control personal contact by wearing protective clothing.
• Prevent, by any means available, spillage from entering drains or water courses.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

**PROCEDURE FOR HANDLING**
• Avoid all personal contact, including inhalation.
• Wear protective clothing when risk of exposure occurs.
• Use in a well-ventilated area.
• Prevent concentration in hollows and sumps.
Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
• Do NOT cut, drill, grind or weld such containers.
• In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

**SUITABLE CONTAINER**
• DO NOT use aluminium or galvanised containers.
• Polyethylene or polypropylene container.
• Check all containers are clearly labelled and free from leaks.

**STORAGE INCOMPATIBILITY**
■ Sodium carbonate:
• aqueous solutions are strong bases
• reacts violently with finely divided aluminium, fluorine, lithium, phosphorus pentoxide, sulfuric acid
• reacts with fluorine gas at room temperature, generating incandescence.
• is incompatible with organic anhydrides, acrylates, alcohols, aldehydes, alkylene oxides, substituted allyls, cellulose nitrate, cresols, caprolactam solution, epichlorohydrin, ethylene dichloride, isocyanates, ketones, glycols, nitrates, phenols, phosphorus pentoxide 2,4,6-trinitrotoluene.
• Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.
• These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.
• The state of subdivision may affect the results.
• In presence of moisture, the material is corrosive to aluminium, zinc and tin producing highly flammable hydrogen gas.
• Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.

**continued...**

• Avoid contact with copper, aluminium and their alloys.

**PACKAGING MATERIAL INCOMPATIBILITIES**

| Chemical Name | Container Type |
|---|---|
| Soda Ash (see Sodium Carbonate) | Aluminum |

**STORAGE REQUIREMENTS**

• Store in original containers.
• Keep containers securely sealed.
• Store in a cool, dry area protected from environmental extremes.
• Store away from incompatible materials and foodstuff containers.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

**EXPOSURE CONTROLS**

The following materials had no OELs on our records
• sodium carbonate: CAS:497- 19- 8

**PERSONAL PROTECTION**




**RESPIRATOR**

Particulate

**EYE**

• Safety glasses with side shields.
• Chemical goggles.
• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

**HANDS/FEET**

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
• frequency and duration of contact,
• chemical resistance of glove material,
• glove thickness and
• dexterity.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
• polychloroprene
• nitrile rubber
• butyl rubber
• fluorocaoutchouc.

**OTHER**

• Overalls.
• P.V.C. apron.
• Barrier cream.
• Skin cleansing cream.

**ENGINEERING CONTROLS**

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator.

**continued...**

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE**

White hygroscopic odourless powder / granular mildly alkaline solid: mixes with water (215 g/l, 20 C; 45.5 g/100 ml, 100 C). Soluble in glycerol and slightly soluble in alcohol. Bitter alkaline taste. On exposure to air, will gradually absorb one mole of water. Typical bulk density 60-65 lbs/cft
There are two forms of sodium carbonate available, light soda and dense soda. Impurities of sodium carbonate may include water (< 1.5 %), sodium chloride (< 0.5 %), sulphate (< 0.1 %), calcium (< 0.1 %), magnesium (< 0.1 %) and iron (< 0.004 %). The purity and the impurity profile depends on the composition of the raw materials, the production process and the intended use of the product. For example the purity of the pharmaceutical grade must be higher than 99.5 % in Europe
The average particle size diameter (d50) of light sodium carbonate is in the range of 90 to 150 um and of dense sodium carbonate is in the range of 250 to 500 um.

**PHYSICAL PROPERTIES**

Solid.
Mixes with water.
Alkaline.

| | | | |
|---|---|---|---|
| State | Divided solid | Molecular Weight | 106 |
| Melting Range (°C) | 851 | Viscosity | Not Applicable |
| Boiling Range (°C) | Not Applicable | Solubility in water (g/L) | Miscible |
| Flash Point (°C) | Not applicable | pH (1% solution) | 11.3 |
| Decomposition Temp (°C) | >400 | pH (as supplied) | Not applicable |
| Autoignition Temp (°C) | Not applicable | Vapour Pressure (kPa) | Not applicable |
| Upper Explosive Limit (%) | Not applicable | Specific Gravity (water=1) | 2.53 @ 20 C |
| Lower Explosive Limit (%) | Not applicable | Relative Vapour Density (air=1) | Not applicable. |
| Volatile Component (%vol) | Not applicable | Evaporation Rate | Not applicable |

## Section 10 - STABILITY AND REACTIVITY

**CONDITIONS CONTRIBUTING TO INSTABILITY**

• Presence of incompatible materials.
• Product is considered stable.
• Hazardous polymerisation will not occur.
*For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

**POTENTIAL HEALTH EFFECTS**

ACUTE HEALTH EFFECTS
■ Harmful by inhalation.

■ Irritating to eyes, respiratory system and skin.

CHRONIC HEALTH EFFECTS
■ Cumulative effects may result following exposure*.
■ * (limited evidence).

**TOXICITY AND IRRITATION**

SODIUM CARBONATE:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY
Oral (rat) LD50: 4090 mg/kg
Inhalation (rat) LC50: 2300 mg/m³/2h
Oral (Rat) LD50: 2800 mg/kg *
Dermal (Rat) LD50: >2000 mg/kg *
Oral (Human) LD: 714 mg/kg
Oral (Mouse) LD50: 6600 mg/kg
Inhalation (Mouse) LC50: 1200 mg/m³/2h
Intraperitoneal (Mouse) LD50: 117 mg/kg
Inhalation (Guinea pig) LC50: 800 mg/m³/2h
Subcutaneous (Mouse) LD50: 2210 mg/kg

IRRITATION
Skin (rabbit): 500 mg/24h Mild
Eye (rabbit): 100 mg/24h Moderate
Eye (rabbit): 100 mg/30s Mild
Eye (rabbit): 50 mg SEVERE

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound.

**continued...**

for sodium carbonate:
Sodium carbonate has no or a low skin irritation potential but it is considered irritating to the eyes. Due to the alkaline properties an irritation of the respiratory tract is also possible.<</>.
The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis.

## Section 12 - ECOLOGICAL INFORMATION

No data

**Ecotoxicity**

| Ingredient | Persistence: Water/Soil | Persistence: Air | Bioaccumulation | Mobility |
|---|---|---|---|---|
| sodium carbonate | LOW | | LOW | HIGH |

**GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles**

| Name / Cas No / RTECS No | EHS | TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium carbonate / CAS:497-19- 8 / VZ4050000 | 1243 | 646 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | 0 | 3 | 1 | 2 | | | SD | 2 |

Legend:
EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships) NRT=Net Register Tonnag
A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation, B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=
aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg), C2=Acutemammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalia
inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion, D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities,
For column A2: R=Readily biodegradable, NR=Not readily biodegradable.
For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic.
For column E1: NT=Not tainting (tested), T=Tainting test positive.
For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances.
The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard.
(GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

## Section 13 - DISPOSAL CONSIDERATIONS

■ Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.
A Hierarchy of Controls seems to be common - the user should investigate:
• Reduction.
• DO NOT allow wash water from cleaning or process equipment to enter drains.
• It may be necessary to collect all wash water for treatment before disposal.
• In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
• Where in doubt contact the responsible authority.
• Recycle wherever possible.
• Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
• Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
• Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

**continued...**

## Section 14 - TRANSPORTATION INFORMATION

**HAZCHEM:**
None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

*GESAMP hazard profiles for this material can be found in section 12 of the MSDS.*

## Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE None

**REGULATIONS**

**sodium carbonate (CAS: 497-19-8) is found on the following regulatory lists;**
"Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP", "GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","International Council of Cl Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals"

## Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.



Issue Date: 22-Jul-2010
Print Date: 10-Feb-2011

*This is the end of the MSDS.*

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **AQUAGEL®**

**Revision Date:** 03-Jan-2008

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to criteria of WorkSafe

**Manufacturer/Supplier**

Halliburton/Baroid Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
New Zealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** AQUAGEL®
**Synonyms:** None
**Chemical Family:** Mineral
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Viscosifier

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Crystalline silica, cristobalite | 14464-46-1 | 0 - 1% | 0.1 mg/m$^3$ | 0.025 mg/m$^3$ |

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| | | | | |
|---|---|---|---|---|
| Crystalline silica, tridymite | 15468-32-3 | 0 - 1% | 0.1 mg/m$^3$ | 0.05 mg/m$^3$ |
| Crystalline silica, quartz | 14808-60-7 | 1-6 | 0.1 mg/m$^3$ | 0.025 mg/m$^3$ |
| Bentonite | 1302-78-9 | 92-100 | Not applicable | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview**

**CAUTION! - ACUTE HEALTH HAZARD**
May cause eye and respiratory irritation.

**DANGER! - CHRONIC HEALTH HAZARD**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicity:** | 0 |
| **Body Contact:** | 0 |
| **Reactivity:** | 0 |
| **Chronic:** | 4 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Notes to Physician** Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** All standard fire fighting media

**Unsuitable Extinguishing Media** None known.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Not applicable.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** None known.

**Procedure for Cleaning / Absorption** Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. HANDLING AND STORAGE

**Handling Precautions** This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Storage Information** Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Product has a shelf life of 12 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

**Respiratory Protection** Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.

**Hand Protection** Normal work gloves.

**Skin Protection** Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Powder |
| **Color:** | Tan to Gray |
| **Odor:** | Mild earthy |
| **pH:** | 8-10 |
| **Specific Gravity @ 20 C (Water=1):** | 2.65 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Flammability Limits in Air - Upper ($g/m^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | 8 - 12 |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Disperses |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Hydrofluoric acid. |
| **Hazardous Decomposition Products** | Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C). |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).<br><br>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below). |
| **Skin Contact** | May cause mechanical skin irritation. |
| **Eye Contact** | May cause eye irritation. |
| **Ingestion** | None known |
| **Aggravated Medical Conditions** | Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust. |

**Chronic Effects/Carcinogenicity**

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information**

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997). |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not Determined

### Ecotoxicological Information

**Acute Fish Toxicity:** TLM96: 10000 ppm (Oncorhynchus mykiss)
**Acute Crustaceans Toxicity:** Not determined

| | |
|---|---|
| **Acute Algae Toxicity:** | Not determined |
| **Chemical Fate Information** | Not determined |
| **Other Information** | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| **Disposal Method** | Bury in a licensed landfill according to federal, state, and local regulations. |
| **Contaminated Packaging** | Follow all applicable national or local regulations. |

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

| | |
|---|---|
| **EPG:** | Not determined |
| **IERG:** | Not determined |
| **Labels:** | None |

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | Not Determined |
| **US TSCA Inventory** | All components listed on inventory. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **Classification** | Crystalline silica is not classified as a carcinogen in EU Council Directives 67/548/EEC and 88/379/EEC. |
| **Risk Phrases** | None |
| **Safety Phrases** | None |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand Poisons Information System**
Deunedin: -(03) 479 1200 (Normal Hours)
-(03) 474 0999 (Emergency)

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **BDF-437**

**Revision Date:** 22-Aug-2006

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Trade Name:** BDF-437
**Synonyms:** None
**Chemical Family:** Carbohydrate Blend
**Application:** Fluid Loss Additive

**Manufacturer/Supplier**

Baroid Fluid Services
a Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | ACGIH TLV-TWA | OSHA PEL-TWA |
|---|---|---|---|---|
| Sodium chloride | 7647-14-5 | 10 - 30% | Not applicable | Not applicable |
| Sodium carboxymethyl cellulose | 9004-32-4 | 30 - 60% | Not applicable | Not applicable |

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation. May be harmful if swallowed.

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** If swallowed, give at least 3-4 glasses of water, but do not induce vomiting. Do not give anything by mouth to an unconscious or convulsing person. Get medical attention.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

| | |
|---|---|
| **Flash Point/Range (F):** | > 212 |
| **Flash Point/Range (C):** | > 93 |
| **Flash Point Method:** | PMCC |
| **Autoignition Temperature (F):** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Lower (oz./ft3):** | 4.2 |
| **Flammability Limits in Air - Upper (%):** | Not Determined |

| | |
|---|---|
| **Fire Extinguishing Media** | All standard firefighting media. |
| **Special Exposure Hazards** | Not applicable. |
| **Special Protective Equipment for Fire-Fighters** | Not applicable. |
| **NFPA Ratings:** | Health 1, Flammability 1, Reactivity 0 |
| **HMIS Ratings:** | Flammability 1, Reactivity 1, Health 1 |

## 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal Precautionary Measures** | Use appropriate protective equipment. |
| **Environmental Precautionary Measures** | Prevent from entering sewers, waterways, or low areas. |
| **Procedure for Cleaning / Absorption** | Scoop up and remove. |

## 7. HANDLING AND STORAGE

| | |
|---|---|
| **Handling Precautions** | Avoid contact with eyes, skin, or clothing. Slippery when wet. |
| **Storage Information** | Keep container closed when not in use. Store in a cool, dry location. Product has a shelf life of 36 months. |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. |
| **Respiratory Protection** | Not normally needed. But if significant exposures are possible then the following respirator is recommended:<br>Dust/mist respirator. (95%) |
| **Hand Protection** | Impervious rubber gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Wear safety glasses or goggles to protect against exposure. |
| **Other Precautions** | None known. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Powder |
| **Color:** | White to yellow |
| **Odor:** | Odorless |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **pH:** | 5-9 (1%) |
| **Specific Gravity @ 20 C (Water=1):** | 1.6 |
| **Density @ 20 C (lbs./gallon):** | Not Determined |
| **Bulk Density @ 20 C (lbs/ft3):** | 40-55 |
| **Boiling Point/Range (F):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (F):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (lbs./gallon):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Strong acids. Strong oxidizers. Bromine trifluoride. Sulfuric acid. |
| **Hazardous Decomposition Products** | None known. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | May cause respiratory irritation. |
| **Skin Contact** | May cause skin irritation. |
| **Eye Contact** | May cause eye irritation. |
| **Ingestion** | In large amounts: May cause abdominal pain, vomiting, nausea, and diarrhea. May affect the heart and cardiovascular system. |
| **Aggravated Medical Conditions** | None known. |
| **Chronic Effects/Carcinogenicity** | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |

| | |
|---|---|
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Not determined |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Slowly biodegradable

**Bio-accumulation** Will not bio-accumulate.

### Ecotoxicological Information

| | |
|---|---|
| **Acute Fish Toxicity:** | Not determined |
| **Acute Crustaceans Toxicity:** | Not determined |
| **Acute Algae Toxicity:** | Not determined |

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**DOT**
Not restricted

**Canadian TDG**
Not restricted

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

## Other Shipping Information

**Labels:** None

## 15. REGULATORY INFORMATION

### US Regulations

| | |
|---|---|
| **US TSCA Inventory** | All components listed on inventory. |
| **EPA SARA Title III Extremely Hazardous Substances** | Not applicable |
| **EPA SARA (311,312) Hazard Class** | Acute Health Hazard |
| **EPA SARA (313) Chemicals** | This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372). |
| **EPA CERCLA/Superfund Reportable Spill Quantity For This Product** | Not applicable. |
| **EPA RCRA Hazardous Waste Classification** | If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA. |
| **California Proposition 65** | All components listed do not apply to the California Proposition 65 Regulation. |
| **MA Right-to-Know Law** | Does not apply. |
| **NJ Right-to-Know Law** | Does not apply. |
| **PA Right-to-Know Law** | Does not apply. |

### Canadian Regulations

| | |
|---|---|
| **Canadian DSL Inventory** | All components listed on inventory. |
| **WHMIS Hazard Class** | Un-Controlled |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

| | |
|---|---|
| **Additional Information** | For additional information on the use of this product, contact your local Halliburton representative.<br><br>For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335. |
| **Disclaimer Statement** | This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user. |

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **EZ-MUD GOLD**

**Revision Date:** 02-Jun-2007

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Not classified as hazardous according to criteria of WorkSafe

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** EZ-MUD GOLD
**Synonyms:** None
**Chemical Family:** Anionic Polymer
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Additive

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Contains no hazardous substances | Mixture | 60 - 100% | Not determined | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye and skin irritation. Airborne dust may be explosive.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicity:** | 0 |
| **Body Contact:** | 0 |
| **Reactivity:** | 0 |
| **Chronic:** | 0 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Unsuitable Extinguishing Media** None known.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases. Organic dust in the presence of an ignition source can be explosive in high concentrations. Good housekeeping practices are required to minimize this potential.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust. Slippery when wet.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Slippery when wet.

**Storage Information** Store away from oxidizers. Store in a cool, dry location. Product has a shelf life of 36 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area.

**Respiratory Protection** Dust/mist respirator. (95%) Not normally needed. But if significant exposures are possible then the following respirator is recommended:

**Hand Protection** Normal work gloves.

**Skin Protection** Normal work coveralls.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Granules |
| **Color:** | Off white |
| **Odor:** | Odorless |
| **pH:** | 7.75 (1%) |
| **Specific Gravity @ 20 C (Water=1):** | 0.8-1.0 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid** None anticipated

| | |
|---|---|
| **Incompatibility (Materials to Avoid)** | Strong oxidizers. |
| **Hazardous Decomposition Products** | Ammonia. Oxides of nitrogen. Carbon monoxide and carbon dioxide. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | None known. |
| **Skin Contact** | May cause mild skin irritation. |
| **Eye Contact** | May cause mild eye irritation. |
| **Ingestion** | None known |
| **Aggravated Medical Conditions** | None known. |
| **Chronic Effects/Carcinogenicity** | No data available to indicate product or components present at greater than 1% are chronic health hazards. |
| **Other Information** | None known. |

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | LD50: > 5000 mg/kg (Rat) |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Not determined |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

| | |
|---|---|
| **Mobility (Water/Soil/Air)** | Not determined |
| **Persistence/Degradability** | Not readily biodegradable. |
| **Bio-accumulation** | Will not bio-accumulate. |

### Ecotoxicological Information

| | |
|---|---|
| **Acute Fish Toxicity:** | TLM96: >1000 mg/l (Pimephales promelas) |
| **Acute Crustaceans Toxicity:** | Not determined |
| **Acute Algae Toxicity:** | EC50: > 500 mg/l (Selenastrum capricornutum) |
| **Chemical Fate Information** | Not determined |
| **Other Information** | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

**EPG:** Not determined
**IERG:** Not determined
**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

**Australian AICS Inventory** Not Determined
**US TSCA Inventory** All components listed on inventory.
**EINECS Inventory** This product, and all its components, complies with EINECS

**Classification** Not Classified

**Risk Phrases** None

**Safety Phrases** None

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand Poisons Information System**
Deunedin: -(03) 479 1200 (Normal Hours)
-(03) 474 0999 (Emergency)

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **N-SEAL™**

**Revision Date:** 02-Jan-2007

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to criteria of WorkSafe

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** N-SEAL™
**Synonyms:** None
**Chemical Family:** Silicate
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Viscosifier

**Prepared By** Chemical Compliance
Telephone: 1-580-251-4335

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Crystalline silica, quartz | 14808-60-7 | 0 - 1% | 0.1 mg/m$^3$ | 0.025 mg/m$^3$ |

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| | | | | |
|---|---|---|---|---|
| Blast furnace slag | 65996-69-2 | 60 - 100% | Not determined | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview**

**CAUTION! - ACUTE HEALTH HAZARD**
May cause eye and respiratory irritation.

**DANGER! - CHRONIC HEALTH HAZARD**
Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposures below recommended exposure limits. Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product. Review the Material Safety Data Sheet (MSDS) for this product, which has been provided to your employer.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicity:** | 0 |
| **Body Contact:** | 1 |
| **Reactivity:** | 0 |
| **Chronic:** | 3 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Under normal conditions, first aid procedures are not required.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** All standard fire fighting media

**Unsuitable Extinguishing Media** None known.

**Special Exposure Hazards** Not applicable.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** None known.

**Procedure for Cleaning / Absorption** Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

## 7. HANDLING AND STORAGE

**Handling Precautions** This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

**Storage Information** Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits listed in Section 2.

**Respiratory Protection** Wear a NIOSH certified, European Standard EN 149, or equivalent respirator when using this product.

**Hand Protection** Normal work gloves.

**Skin Protection** Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

**Eye Protection** Wear safety glasses or goggles to protect against exposure.

**Other Precautions** None known.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Solid |
| **Color:** | White to gray |
| **Odor:** | Odorless |
| **pH:** | 7 - 8 |
| **Specific Gravity @ 20 C (Water=1):** | 2.6 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | 1316 |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Insoluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Strong acids. Strong alkalis. |
| **Hazardous Decomposition Products** | None known. |
| **Additional Guidelines** | Not Applicable |

## 11. TOXICOLOGICAL INFORMATION

| | |
|---|---|
| **Principle Route of Exposure** | Eye or skin contact, inhalation. |
| **Inhalation** | Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).<br><br>Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below). |
| **Skin Contact** | May cause mechanical skin irritation. |
| **Eye Contact** | May cause eye irritation. |
| **Ingestion** | None known |
| **Aggravated Medical Conditions** | Individuals with respiratory disease, including but not limited to asthma and bronchitis, or subject to eye irritation, should not be exposed to quartz dust. |

**Chronic Effects/Carcinogenicity**

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

**Other Information**

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768 (1997).

**Toxicity Tests**

| | |
|---|---|
| **Oral Toxicity:** | Not determined |
| **Dermal Toxicity:** | Not determined |
| **Inhalation Toxicity:** | Not determined |
| **Primary Irritation Effect:** | Not determined |
| **Carcinogenicity** | Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997). |
| **Genotoxicity:** | Not determined |
| **Reproductive / Developmental Toxicity:** | Not determined |

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not Determined

### Ecotoxicological Information

**Acute Fish Toxicity:** Not determined
**Acute Crustaceans Toxicity:** LC50: > 1,000,000 ppm 96-hour (Americamysis bahia)

| | |
|---|---|
| **Acute Algae Toxicity:** | Not determined |
| **Chemical Fate Information** | Not determined |
| **Other Information** | Not applicable |

## 13. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| **Disposal Method** | Bury in a licensed landfill according to federal, state, and local regulations. |
| **Contaminated Packaging** | Follow all applicable national or local regulations. |

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

| | |
|---|---|
| **EPG:** | Not determined |
| **IERG:** | Not determined |
| **Labels:** | None |

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | Not Determined |
| **US TSCA Inventory** | All components listed on inventory. |
| **EINECS Inventory** | This product does not comply with EINECS |
| **Classification** | Crystalline silica is not classified as a carcinogen in EU Council Directives 67/548/EEC and 88/379/EEC. |
| **Risk Phrases** | None |
| **Safety Phrases** | None |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand Poisons Information System**
Deunedin: -(03) 479 1200 (Normal Hours)
-(03) 474 0999 (Emergency)

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **PENETROL™**

**Revision Date:** 14-Jul-2005

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Not classified as hazardous according to criteria of WorkSafe

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** PENETROL™
**Synonyms:** None
**Chemical Family:** Amide
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Wetting Agent

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Diethanolamine | 111-42-2 | 1 - 5% | 3 ppm | 2 mg/m$^3$ |

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| | | | | |
|---|---|---|---|---|
| Coco diethanolamide | | 10 - 30% | Not determined | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 1 |
| **Toxicity:** | 1 |
| **Body Contact:** | 1 |
| **Reactivity:** | 0 |
| **Chronic:** | 1 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

**Skin** Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

**Eyes** In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Unsuitable Extinguishing Media** None known.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

**Storage Information** Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use. Product has a shelf life of 12 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls** Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.

**Hand Protection** Polyvinylchloride gloves.

**Skin Protection** Rubber apron.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Liquid |
| **Color:** | Green |
| **Odor:** | Coconut |
| **pH:** | 9.3 |
| **Specific Gravity @ 20 C (Water=1):** | 1.0 |
| **Density @ 20 C (kg/l):** | 1 |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined**Min:** > 148 |
| **Flash Point Method:** | T.O.C. |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | < 1 |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | 76 |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Miscible |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | Not Determined |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

## 10. STABILITY AND REACTIVITY

**Stability Data:** Stable

**Hazardous Polymerization:** Will Not Occur

**Conditions to Avoid** Avoid contact with oxidizers.

**Incompatibility (Materials to Avoid)** Strong acids. Zinc. Copper and copper alloys.

**Hazardous Decomposition Products** Oxides of nitrogen. Carbon monoxide and carbon dioxide.

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Inhalation** May cause respiratory irritation.
Excessive inhalation causes headache, dizziness, nausea and incoordination.

**Skin Contact** May cause severe skin irritation.

**Eye Contact** May cause eye irritation. May cause corneal injury.

**Ingestion** Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.

**Aggravated Medical Conditions** Skin disorders.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Other Information** None known.

**Toxicity Tests**

**Oral Toxicity:** Not determined

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not determined

**Bio-accumulation** Not Determined

## Ecotoxicological Information

**Acute Fish Toxicity:** Not determined
**Acute Crustaceans Toxicity:** Not determined
**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Disposal should be made in accordance with federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted RQ (Diethanolamine - 2270 kg.)

### Sea Transportation

**IMDG** Not restricted RQ (Diethanolamine - 2270 kg.)

### Other Shipping Information

**EPG:** 3A1
**IERG:** 14
**Labels:** None

## 15. REGULATORY INFORMATION

**Chemical Inventories**

**Australian AICS Inventory** Not Determined
**US TSCA Inventory** All components listed on inventory.
**EINECS Inventory** This product does not comply with EINECS

**Classification** Not Classified

**Risk Phrases** None

**Safety Phrases** None

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

## Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand Poisons Information System**
Deunedin: -(03) 479 1200 (Normal Hours)
-(03) 474 0999 (Emergency)

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

HALLIBURTON

# MATERIAL SAFETY DATA SHEET

**Product Trade Name:** **SODA ASH**

**Revision Date:** 18-Jul-2007

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Statement of Hazardous Nature** Hazardous according to criteria of WorkSafe

**Manufacturer/Supplier**

Halliburton Australia Pty. Ltd.
53-55 Bannister Road
Canning Vale
WA 6155
Australia

ACN Number: 009 000 775
Telephone Number: 61 (08) 9455 8300
Fax Number: 61 (08) 9455 5300

**Product Emergency Telephone**
Australia: 08-64244950
Papua New Guinea: 05 1 281 575 5000
NewZealand: 06-7559274

**Fire, Police & Ambulance - Emergency Telephone**
Australia: 000
Papua New Guinea: 000
New Zealand: 111

**Identification of Substances or Preparation**

**Product Trade Name:** SODA ASH
**Synonyms:** None
**Chemical Family:** Carbonate
**UN Number:** None
**Dangerous Goods Class:** None
**Subsidiary Risk:** None
**Hazchem Code:** None
**Poisons Schedule:** None
**Application:** Buffer

**Prepared By**

Chemical Compliance
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| SUBSTANCE | CAS Number | PERCENT | Australia NOHSC | ACGIH TLV-TWA |
|---|---|---|---|---|
| Sodium carbonate | 497-19-8 | 60 - 100% | Not applicable | Not applicable |

**Total to 100%**

## 3. HAZARDS IDENTIFICATION

**Hazard Overview** May cause eye, skin, and respiratory irritation.

**Hazard Ratings**

| | |
|---|---|
| **Flammability:** | 0 |
| **Toxicity:** | 1 |
| **Body Contact:** | 2 |
| **Reactivity:** | 0 |
| **Chronic:** | 0 |

**Scale: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4**

## 4. FIRST AID MEASURES

**Inhalation** If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

**Skin** Wash with soap and water. Get medical attention if irritation persists.

**Eyes** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

**Ingestion** Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

**Notes to Physician** Not Applicable

## 5. FIRE FIGHTING MEASURES

**Suitable Extinguishing Media** Water fog, carbon dioxide, foam, dry chemical.

**Unsuitable Extinguishing Media** None known.

**Special Exposure Hazards** Decomposition in fire may produce toxic gases.

**Special Protective Equipment for Fire-Fighters** Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautionary Measures** Use appropriate protective equipment. Avoid creating and breathing dust.

**Environmental Precautionary Measures** Prevent from entering sewers, waterways, or low areas.

**Procedure for Cleaning / Absorption** Scoop up and remove.

## 7. HANDLING AND STORAGE

**Handling Precautions** Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

**Storage Information** Store away from acids. Store in a cool, dry location. Product has a shelf life of 36 months.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| | |
|---|---|
| **Engineering Controls** | Use in a well ventilated area. Localized ventilation should be used to control dust levels. |
| **Respiratory Protection** | Dust/mist respirator. (95%) |
| **Hand Protection** | Normal work gloves. |
| **Skin Protection** | Normal work coveralls. |
| **Eye Protection** | Dust proof goggles. |
| **Other Precautions** | Eyewash fountains and safety showers must be easily accessible. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Physical State:** | Powder |
| **Color:** | White |
| **Odor:** | Odorless |
| **pH:** | 11.5 |
| **Specific Gravity @ 20 C (Water=1):** | 2.5 |
| **Density @ 20 C (kg/l):** | Not Determined |
| **Bulk Density @ 20 C (kg/m$^3$):** | Not Determined |
| **Boiling Point/Range (C):** | Not Determined |
| **Freezing Point/Range (C):** | Not Determined |
| **Pour Point/Range (C):** | Not Determined |
| **Flash Point/Range (C):** | Not Determined |
| **Flash Point Method:** | Not Determined |
| **Autoignition Temperature (C):** | Not Determined |
| **Flammability Limits in Air - Lower (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Lower (%):** | Not Determined |
| **Flammability Limits in Air - Upper (g/m$^3$):** | Not Determined |
| **Flammability Limits in Air - Upper (%):** | Not Determined |
| **Vapor Pressure @ 20 C (mmHg):** | Not Determined |
| **Vapor Density (Air=1):** | Not Determined |
| **Percent Volatiles:** | Not Determined |
| **Evaporation Rate (Butyl Acetate=1):** | Not Determined |
| **Solubility in Water (g/100ml):** | Partially soluble |
| **Solubility in Solvents (g/100ml):** | Not Determined |
| **VOCs (g/l):** | Not Determined |
| **Viscosity, Dynamic @ 20 C (centipoise):** | Not Determined |
| **Viscosity, Kinematic @ 20 C (centistrokes):** | Not Determined |
| **Partition Coefficient/n-Octanol/Water:** | Not Determined |
| **Molecular Weight (g/mole):** | 105.99 |
| **Decomposition Temperature (C):** | Not Determined |

## 10. STABILITY AND REACTIVITY

| | |
|---|---|
| **Stability Data:** | Stable |
| **Hazardous Polymerization:** | Will Not Occur |
| **Conditions to Avoid** | None anticipated |
| **Incompatibility (Materials to Avoid)** | Strong acids. |
| **Hazardous Decomposition Products** | Carbon monoxide and carbon dioxide. |

**Additional Guidelines** Not Applicable

## 11. TOXICOLOGICAL INFORMATION

**Principle Route of Exposure** Eye or skin contact, inhalation.

**Inhalation** May cause respiratory irritation.

**Skin Contact** Prolonged or repeated contact may cause skin irritation.

**Eye Contact** May cause eye irritation.

**Ingestion** Irritation of the mouth, throat, and stomach.

**Aggravated Medical Conditions** None known.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 1% are chronic health hazards.

**Other Information** None known.

**Toxicity Tests**

**Oral Toxicity:** LD50: 4220 mg/kg (Rat)

**Dermal Toxicity:** Not determined

**Inhalation Toxicity:** Not determined

**Primary Irritation Effect:** Not determined

**Carcinogenicity** Not determined

**Genotoxicity:** Not determined

**Reproductive / Developmental Toxicity:** Not determined

## 12. ECOLOGICAL INFORMATION

**Mobility (Water/Soil/Air)** Not determined

**Persistence/Degradability** Not applicable

**Bio-accumulation** Not Determined

### Ecotoxicological Information

**Acute Fish Toxicity:** TLM24: 385 mg/l (Lepomis macrochirus)
**Acute Crustaceans Toxicity:** Not determined
**Acute Algae Toxicity:** Not determined

**Chemical Fate Information** Not determined

**Other Information** Not applicable

## 13. DISPOSAL CONSIDERATIONS

**Disposal Method** Bury in a licensed landfill according to federal, state, and local regulations.

**Contaminated Packaging** Follow all applicable national or local regulations.

## 14. TRANSPORT INFORMATION

### Land Transportation

**ADR** Not restricted

### Air Transportation

**ICAO/IATA** Not restricted

### Sea Transportation

**IMDG** Not restricted

### Other Shipping Information

| | |
|---|---|
| **EPG:** | Not determined |
| **IERG:** | Not determined |
| **Labels:** | None |

## 15. REGULATORY INFORMATION

**Chemical Inventories**

| | |
|---|---|
| **Australian AICS Inventory** | Not Determined |
| **US TSCA Inventory** | All components listed on inventory. |
| **EINECS Inventory** | This product, and all its components, complies with EINECS |
| **Classification** | Xi - Irritant. |
| **Risk Phrases** | R36 Irritating to eyes. |
| **Safety Phrases** | S2 Keep out of reach of children.<br>S22 Do not breathe dust.<br>S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |

## 16. OTHER INFORMATION

**The following sections have been revised since the last issue of this MSDS**
Not applicable

### Contact

**Australian Poisons Information Centre**
24 Hour Service: - 13 11 26
Police or Fire Brigade: - 000 (exchange): - 1100

**New Zealand Poisons Information System**
Deunedin: -(03) 479 1200 (Normal Hours)
-(03) 474 0999 (Emergency)

**Additional Information**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

**Disclaimer Statement**

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*****END OF MSDS*****