SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

<table>
<thead>
<tr>
<th>Product name</th>
<th>TRIS(HYDROXYMETHYL)AMINOMETHANE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>tris(hydroxymethyl)aminomethane</td>
</tr>
</tbody>
</table>

Synonyms

1,1,1-tris(hydroxymethyl)-, 1,1,1-tris(hydroxymethyl)methylamine, 1,3-propanediol, 2-amino-2-(hydroxymethyl)-2-(hydroxymethyl)propane, 2-amino-2-(hydroxymethyl)-1,3-propanediol, 2-amino-2-(hydroxymethyl)propane-1,3-diol, Adex-tham methylamine, C4-H11-N-O3, Fluka 93362, Fris Biochemical Grade 90080, H2NC(CH2OH)3, Pehanorm, Sigma T8524, THAM, THAM-E, TRIS Buffer t, TRIS-AMINO, Talatrol, Tris Base, Tris amino, Tris-steril, Trisamine, Trisaminol, Trizma, Trometamol, Tromethane, Tromethamin, aminotrimethylolmethane, aminotris(hydroxymethyl)methane, trimethylol aminomethane, tris(hydroxymethyl)methylamine, tris(hydroxymethyl)methylamine GPR, tris(hydroxymethyl)methylamine UNIVAR, tris(hydroxymethyl)methanamine

Proper shipping name Not Applicable

Chemical formula C4H11NO3

Other means of identification Not Available

CAS number 77-86-1

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses Used as an emulsifying agent for oils, fats, waxes, cosmetic cream, lotions. Used as an absorbent for acidic gases, as a buffer. In medicine as an alkalinising agent in treatment of metabolic acidosis.

Details of the supplier of the safety data sheet

Registered company name VWR International, Pty Ltd

Address Unit 1/31 Archimedes Place 4172 QLD Australia

Telephone 61 7 3009 4100 ; 1300 727 696

Fax 61 7 3009 4199 ; 1300 135 123

Website http://au.vwr.com

Email csaus@au.vwr.com

Emergency telephone number

Association / Organisation Not Available

Emergency telephone numbers 61 7 3009 4100 ; 1300 727 696

Other emergency telephone numbers 61 7 3009 4100 ; 1300 727 696

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL, NON-DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

Continued...
**Flammability**: 1  
**Toxicity**: 0  
**Body Contact**: 2  
**Reactivity**: 1  
**Chronic**: 2  

0 = Minimum  
1 = Low  
2 = Moderate  
3 = High  
4 = Extreme

<table>
<thead>
<tr>
<th>Poisons Schedule</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GHS Classification</strong></td>
<td>Skin Corrosion/Irritation Category 2, Eye Irrit. 2, STOT - SE (Resp. Irr.) Category 3</td>
</tr>
</tbody>
</table>

**Legend:**  

**Label elements**

**GHS label elements**

![Warning symbol]

**SIGNAL WORD**  WARNING

**Hazard statement(s)**

H315  Causes skin irritation  
H319  Causes serious eye irritation  
H335  May cause respiratory irritation

**Precautionary statement(s) Prevention**

P271  Use only outdoors or in a well-ventilated area.  
P261  Avoid breathing dust/fume/gas/mist/vapours/spray.  
P280  Wear protective gloves/protective clothing/eye protection/face protection.

**Precautionary statement(s) Response**

P321  Specific treatment (see advice on this label).  
P305+P351+P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P312  Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.  
P337+P313  If eye irritation persists: Get medical advice/attention.  
P302+P352  IF ON SKIN: Wash with plenty of water and soap  
P304+P340  IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P332+P313  If skin irritation occurs: Get medical advice/attention.  
P362+P364  Take off contaminated clothing and wash it before reuse.

**Precautionary statement(s) Storage**

P405  Store locked up.  
P403+P233  Store in a well-ventilated place. Keep container tightly closed.

**Precautionary statement(s) Disposal**

P501  Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration

### SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

**Substances**

<table>
<thead>
<tr>
<th>CAS No</th>
<th>%[weight]</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>77-86-1</td>
<td>&gt;98</td>
<td>tris(hydroxymethyl)aminomethane</td>
</tr>
</tbody>
</table>

**Mixtures**
SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact
- 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 Contact
- 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.

Inhalation
- 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.
- Transport to hospital, or doctor, without delay.

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

Indication of any immediate medical attention and special treatment needed
- Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media
- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

Special hazards arising from the substrate or mixture
- Fire Incompatibility
  - Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters
- Fire Fighting
  - Alert Fire Brigade and tell them location and nature of hazard.
  - Wear breathing apparatus plus protective gloves.
  - Prevent, by any means available, spillage from entering drains or water courses.
  - Use water delivered as a fine spray to control fire and cool adjacent area.

- Fire/Explosion Hazard
  - Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
  - Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).
  - Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusty 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 (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
- Minor Spills
  - Clean up all spills immediately.
Avoid breathing dust and contact with skin and eyes.
> Wear protective clothing, gloves, safety glasses and dust respirator.
> Use dry clean up procedures and avoid generating dust.

Major Spills
> Moderate hazard.
> **CAUTION:** Advise personnel in area.

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

**SECTION 7 HANDLING AND STORAGE**

**Precautions for safe handling**

**Safe 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.

**Other information**
> 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.

**Conditions for safe storage, including any incompatibilities**

**Suitable container**
> Polyethylene or polypropylene container.
> Check all containers are clearly labelled and free from leaks.

**Storage incompatibility**
> 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.
> Avoid contact with copper, aluminium and their alloys.
> Avoid reaction with oxidising agents.

**PACKAGE MATERIAL INCOMPATIBILITIES**

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Control parameters**

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**
Not Available

**EMERGENCY LIMITS**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TEEL-0</th>
<th>TEEL-1</th>
<th>TEEL-2</th>
<th>TEEL-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>tris(hydroxymethyl)aminomethane</td>
<td>25(ppm)</td>
<td>75(ppm)</td>
<td>500(ppm)</td>
<td>500(ppm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Original IDLH</th>
<th>Revised IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRIS(HYDROXYMETHYL)AMINOMETHANE</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

**Exposure controls**

**Appropriate engineering controls**
Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
> Process controls which involve changing the way a job activity or process is done to reduce the risk.

**Personal protection**

**Eye and face protection**
> 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.
Skin protection

See Hand protection below

Hand protection

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Body protection

See Other protection below

Other protection

- Overalls.
- P.V.C. apron.
- Barrier cream.

Thermal hazards

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index". The effect(s) of the following substance(s) are taken into account in the TRIS(HYDROXYMETHYL)AMINOMETHANE Not Available

<table>
<thead>
<tr>
<th>Material</th>
<th>CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>* CPI - Chemwatch Performance Index</td>
<td></td>
</tr>
<tr>
<td>A: Best Selection</td>
<td></td>
</tr>
<tr>
<td>B: Satisfactory; may degrade after 4 hours continuous immersion</td>
<td></td>
</tr>
<tr>
<td>C: Poor to Dangerous Choice for other than short term immersion</td>
<td></td>
</tr>
</tbody>
</table>

Respiratory protection

<table>
<thead>
<tr>
<th>Required Minimum Protection Factor</th>
<th>Half-Face Respirator</th>
<th>Full-Face Respirator</th>
<th>Powered Air Respirator</th>
</tr>
</thead>
<tbody>
<tr>
<td>up to 10 x ES</td>
<td>P1 Air-line*</td>
<td>-</td>
<td>PAPR-P1</td>
</tr>
<tr>
<td>up to 50 x ES</td>
<td>Air-line**</td>
<td>P2</td>
<td>PAPR-P2</td>
</tr>
<tr>
<td>up to 100 x ES</td>
<td>-</td>
<td>P3</td>
<td>-</td>
</tr>
<tr>
<td>100+ x ES</td>
<td>-</td>
<td>Air-line**</td>
<td>PAPR-P3</td>
</tr>
</tbody>
</table>

* = Negative pressure demand  ** - Continuous flow
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Large irregular, odourless white crystals. Soluble in water 80 g/100 ml @ 20deg C. Alkaline solution. Corrosive to copper, brass, and aluminium.</td>
</tr>
<tr>
<td>Physical state</td>
<td>Divided Solid</td>
</tr>
<tr>
<td>Odour</td>
<td>Not Available</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH (as supplied)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>169</td>
</tr>
<tr>
<td>Initial boiling point and boiling range (°C)</td>
<td>219</td>
</tr>
<tr>
<td>Flash point (°C)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability</td>
<td>Not Available</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Vapour pressure (kPa)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Solubility in water (g/L)</td>
<td>Miscible</td>
</tr>
<tr>
<td>Vapour density (Air = 1)</td>
<td>Not applicable.</td>
</tr>
<tr>
<td>Relative density (Water = 1)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Partition coefficient n-octanol / water</td>
<td>Not Available.</td>
</tr>
<tr>
<td>Auto-ignition temperature (°C)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Viscosity (cSt)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Molecular weight (g/mol)</td>
<td>121.14</td>
</tr>
<tr>
<td>Surface Tension (dyn/cm or mN/m)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Volatile Component (%vol)</td>
<td>Nil @ 38 C.</td>
</tr>
<tr>
<td>Gas group</td>
<td>Not Available</td>
</tr>
<tr>
<td>pH as a solution(1%)</td>
<td>10.36 @ 1.21%</td>
</tr>
</tbody>
</table>

Continued...
SECTION 10 STABILITY AND REACTIVITY

Reactivity  See section 7
Chemical stability
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.
Possibility of hazardous reactions  See section 7
Conditions to avoid  See section 7
Incompatible materials  See section 7
Hazardous decomposition products  See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled
Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.

Ingestion
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.

Skin Contact
Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

Eye
Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Chronic
Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
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. A prime symptom is breathlessness.

<table>
<thead>
<tr>
<th>tris(hydroxymethyl)aminomethane</th>
<th>TOXICITY</th>
<th>IRRITATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: 5900 mg/kg</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

* Value obtained from manufacturer’s msds
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with
abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

<table>
<thead>
<tr>
<th>Acute Toxicity</th>
<th>Not Applicable</th>
<th>Carcinogenicity</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Irritation/Corrosion</td>
<td>Skin Corrosion/Irritation Category 2</td>
<td>Reproductivity</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Serious Eye Damage/Irritation</td>
<td>Eye Irrit. 2</td>
<td>STOT - Single Exposure</td>
<td>STOT - SE (Resp. Irr.) Category 3</td>
</tr>
<tr>
<td>Respiratory or Skin sensitisation</td>
<td>Not Applicable</td>
<td>STOT - Repeated Exposure</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Mutagenicity</td>
<td>Not Applicable</td>
<td>Aspiration Hazard</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

CMR STATUS

SECTION 12 ECOLOGICAL INFORMATION

Toxicity
For tris(hydroxymethyl)aminomethane (TRIS AMINO; CAS 77-86-1) and its surrogates 2-amino-2-methyl-1,3-propanediol (AMPD; CAS 115-69-5) and monoisobutanolamine (AMP; CAS 124-68-5)
Consistent with the general structural and chemical similarities of TRIS AMINO, AMPD and AMP, studies have demonstrated a similar pattern of physical chemistry, environmental fate, and ecological and mammalian toxicity profiles. The compounds are solid crystalline masses in the pure or neat state, and possess common general physical/chemical properties.
Environmental fate:

Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Not Available</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Bioaccumulation</td>
</tr>
</tbody>
</table>

Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Available</td>
<td>Mobility</td>
</tr>
</tbody>
</table>

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

<table>
<thead>
<tr>
<th>Product / Packaging disposal</th>
<th>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:</th>
</tr>
</thead>
</table>

SECTION 14 TRANSPORT INFORMATION

Labels Required

<table>
<thead>
<tr>
<th>Marine Pollutant: NO</th>
<th>HAZCHEM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture
tris(hydroxymethyl)aminomethane (77-86-1) is found on the following regulatory lists:

- OECD List of High Production Volume (HPV) Chemicals
- International Council of Chemical Associations (ICCA) - High Production Volume List
- International Fragrance Association (IFRA) Survey: Transparency List
- Australia Inventory of Chemical Substances (AICS)
- Fisher Transport Information
- Sigma-Aldrich Transport Information
- GESAMP/EHS Composite List - GESAMP Hazard Profiles
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
- Australia FAISD Handbook - First Aid Instructions, Warning Statements, and General Safety Precautions
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix E (Part 2)
- Australia National Pollutant Inventory

SECTION 16 OTHER INFORMATION

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](http://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.

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