

MAPEI KERAPOXY COMPONENT A

Chemwatch Material Safety Data Sheet
Issue Date: 10-Jul-2008
XC9317EC

CHEMWATCH 5044-28
Version No:4
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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

MAPEI KERAPOXY COMPONENT A

SYNONYMS

"epoxy resin grout adhesive acid resistant"

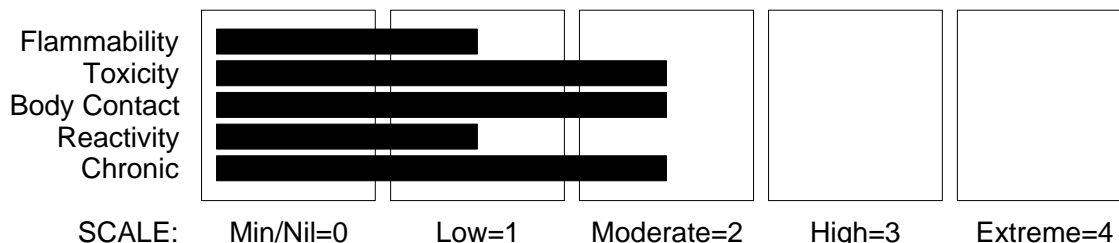
PRODUCT USE

Part A of a two part acid- resistant epoxy grout and adhesive for ceramic tiles. (VOC per CA South Coast Air Quality Management District, Rule 1168)

SUPPLIER

Company: Mapei Pty Ltd
Address:
12 Parkview Drive
Archerfield
QLD, 4108
AUS
Telephone: +61 7 3276 5000
Fax: +61 7 3276 5076

CHEMWATCH HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

POISONS SCHEDULE

S5

RISK

Harmful by inhalation in contact with skin and if swallowed.
Irritating to eyes and skin.

May cause SENSITISATION by skin contact.

Harmful to aquatic organisms may cause long- term adverse effects in the aquatic environment.
Possible risk of irreversible effects.

SAFETY

Wear suitable protective clothing.

To clean the floor and all objects contaminated by this material use water and detergent.

Keep away from food drink and animal feeding stuffs.

If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
bisphenol A/ epichlorohydrin resin, liquid	25068-38-6	10-20
cresyl glycidyl ether	26447-14-3	<5
fillers as talc	14807-96-6	N/S

continued...

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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.

SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).

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

- Foam.
- Dry chemical powder.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.

Combustion products include: carbon dioxide (CO₂),

aldehydes, other pyrolysis products typical of burning organic material.

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.

HAZCHEM: None

Personal Protective Equipment

Gas tight chemical resistant suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.

continued...

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Section 6 - ACCIDENTAL RELEASE MEASURES

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.
- DO NOT allow clothing wet with material to stay in contact with skin.

SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.

STORAGE INCOMPATIBILITY

Avoid reaction with amines, mercaptans, strong acids and oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m ³
Australia Exposure Standards	talc (Talc, (containing no asbestos fibres))	2.5
Australia Exposure Standards	talc (Soapstone (respirable dust))	3

The following materials had no OELs on our records

- bisphenol A/ epichlorohydrin resin, liquid:

CAS:25068- 38- 6 CAS:25085- 99- 8

- cresyl glycidyl ether:

CAS:26447- 14- 3 CAS:2210- 79- 9 CAS:2180- 25- 8 CAS:2186- 24- 5

PERSONAL PROTECTION

RESPIRATOR

Type A-P Filter of sufficient capacity

EYE

- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

- When handling liquid-grade epoxy resins wear chemically protective gloves (e.g nitrile or nitrile-butadiene rubber), boots and aprons.
- DO NOT use cotton or leather (which absorb and concentrate the resin), polyvinyl chloride, rubber or polyethylene gloves (which absorb the resin).

Wear chemical protective gloves, eg. PVC.

NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

OTHER

- Overalls.
- P.V.C. apron.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Coloured paste with a typical odour; does not mix with water.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Sinks in water.

Molecular Weight: Not available.
Melting Range (°C): Not applicable.
Solubility in water (g/L): Immiscible
pH (1% solution): Not available.
Volatile Component (%vol): <22 g/l (VOC)
Relative Vapour Density (air=1): Not available.
Lower Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not applicable
State: Liquid

Boiling Range (°C): Not available
Specific Gravity (water=1): 1.65
pH (as supplied): Not applicable
Vapour Pressure (kPa): 0.01
Evaporation Rate: Not available
Flash Point (°C): Not available

Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C): Not available.
Viscosity: Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

Harmful by inhalation, in contact with skin and if swallowed.

Irritating to eyes and skin.

CHRONIC HEALTH EFFECTS

May cause SENSITISATION by skin contact.

Possible risk of irreversible effects.

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

BISPHENOL A/ EPICHLOROHYDRIN RESIN, LIQUID:

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

TOXICITY

Oral (rat) LD50: 11400 mg/kg

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) exhibit many common characteristics with respect to animal toxicology. One such oxirane is ethyloxirane; data presented here may be taken as representative.

for 1,2-butylene oxide (ethyloxirane):

Ethyloxirane increased the incidence of tumours of the respiratory system in male and female rats exposed via inhalation.

Significant increases in nasal papillary adenomas and combined alveolar/bronchiolar adenomas and carcinomas were observed in male rats exposed to 1200 mg/m³ ethyloxirane via inhalation for 103 weeks. There was also a significant positive trend in the incidence of combined alveolar/bronchiolar adenomas and carcinomas. Nasal papillary adenomas were also observed in 2/50 high-dose female rats with none occurring in control or low-dose animals. In mice exposed chronically via inhalation, one male mouse developed a squamous cell papilloma in the nasal cavity (300 mg/m³) but other tumours were not observed. Tumours were not observed in mice exposed chronically via dermal exposure. When trichloroethylene containing 0.8% ethyloxirane was administered orally to mice for up to 35 weeks, followed by 0.4% from weeks 40 to 69, squamous-cell carcinomas of the forestomach occurred in 3/49 males (p=0.029, age-adjusted) and 1/48 females at week 106. Trichloroethylene administered alone did not induce these tumours and they were not observed in control animals. Two structurally related substances, oxirane (ethylene oxide) and methyloxirane (propylene oxide), which are also direct-acting alkylating agents, have been classified as carcinogenic.

CRESYL GLYCIDYL ETHER:

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

TOXICITY

Oral (rat) LD50: 5140 mg/kg

Inhalation (rat) LD50: 282 mg/m³

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis

IRRITATION

Nil Reported

continued...

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Section 11 - TOXICOLOGICAL INFORMATION

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Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) exhibit many common characteristics with respect to animal toxicology. One such oxirane is ethyloxirane; data presented here may be taken as representative.

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Mutagenic to bacteria

TALC:

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

TOXICITY

IRRITATION

Skin (human): 0.3 mg/3d- I Mild

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

MATERIAL

CARCINOGEN

REPROTOXIN

SENSITISER

SKIN

talc

IARC:3

CARCINOGEN

IARC: International Agency for Research on Cancer (IARC) Carcinogens: talc Category: The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.

Section 12 - ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Section 13 - DISPOSAL CONSIDERATIONS

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

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

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: S5

REGULATIONS

Mapei Kerapoxy Component A (CAS: None):

No regulations applicable

bisphenol A/ epichlorohydrinresin, liquid (CAS: 25068-38-6) is found on the following regulatory lists;

Australia Hazardous Substances

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)

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Section 15 - REGULATORY INFORMATION

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5
OECD Representative List of High Production Volume (HPV) Chemicals

bisphenol A/ epichlorohydrin resin, liquid (CAS: 25085-99-8) is found on the following regulatory lists;
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4
Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5
OECD Representative List of High Production Volume (HPV) Chemicals

cresyl glycidylether (CAS: 26447-14-3) is found on the following regulatory lists;
Australia Hazardous Substances
OECD Representative List of High Production Volume (HPV) Chemicals

cresyl glycidylether (CAS: 2210-79-9) is found on the following regulatory lists;
Australia Hazardous Substances

cresyl glycidylether (CAS: 2186-24-5) is found on the following regulatory lists;
Australia Hazardous Substances

talc (CAS: 14807-96-6) is found on the following regulatory lists;
Australia Exposure Standards
Australia Hazardous Substances

Australia High Volume Industrial Chemical List (HVICL)
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP
International Agency for Research on Cancer (IARC) Carcinogens
OECD Representative List of High Production Volume (HPV) Chemicals

No data available for cresyl glycidylether as CAS: 2180-25-8.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name

bisphenol A/ epichlorohydrin resin, liquid

cresyl glycidylether

CAS

25068- 38- 6, 25085- 99- 8

26447- 14- 3, 2210- 79- 9, 2180- 25- 8, 2186-

24- 5

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.

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

MAPEI KERAPOXY COMPONENT B

SYNONYMS

"amine epoxy hardener curing agent"

PRODUCT USE

Base or Part A of a 2 pack. epoxy system. Requires that the two parts be mixed by hand or mixer before use, in accordance with manufacturers directions. Mix only as much as is required. (VOC per CA South Coast Air Quality Management District, Rule 1168)

SUPPLIER

Company: Mapei Pty Ltd

Address:

12 Parkview Drive

Archerfield

QLD, 4108

AUS

Telephone: +61 7 3276 5000

Fax: +61 7 3276 5076

CHEMWATCH HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

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

COMBUSTIBLE LIQUID, regulated under AS1940 for Bulk Storage purposes only.

POISONS SCHEDULE

S5

RISK

Harmful in contact with skin and if swallowed.

Causes burns.

Risk of serious damage to eyes.

May cause SENSITISATION by skin contact.

May cause harm to the unborn child.

SAFETY

Keep locked up.

Wear suitable protective clothing.

In case of insufficient ventilation wear suitable respiratory equipment.

To clean the floor and all objects contaminated by this material use water and detergent.

This material and its container must be disposed of in a safe way.

Keep away from food drink and animal feeding stuffs.

Take off immediately all contaminated clothing.

In case of accident or if you feel unwell IMMEDIATELY contact Doctor or Poisons Information Centre (show label if possible).

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium aluminosilicate	1344-00-9	<10
isophorone diamine	2855-13-2	<10
3- dimethylaminopropylamine	109-55-7	<2
polyethylene amines as tetraethylenepentamine	112-57-2	<2
No other ingredient information supplied.		

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.

SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

FIRE/EXPLOSION HAZARD

- Combustible.
- Slight fire hazard when exposed to heat or flame.

Combustion products include: carbon dioxide (CO₂),

nitrogen oxides (NO_x),

other pyrolysis products typical of burning organic

material.

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.

HAZCHEM: None

Personal Protective Equipment

Gas tight chemical resistant suit.

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Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.

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.
- DO NOT allow clothing wet with material to stay in contact with skin.

SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.

STORAGE INCOMPATIBILITY

- Avoid strong acids.
- Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m ³
Australia Exposure Standards	sodium aluminosilicate (Inspirable dust (not otherwise classified))	10

The following materials had no OELs on our records

- isophorone diamine: CAS:2855- 13- 2
- 3- dimethylaminopropylamine: CAS:109- 55- 7
- tetraethylenepentamine: CAS:112- 57- 2

PERSONAL PROTECTION

RESPIRATOR

Type AK-P Filter of sufficient capacity

EYE

- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

Wear chemical protective gloves, eg. PVC.

NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

OTHER

- Overalls.
- P.V.C. apron.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Brown combustible liquid with an ammoniacal odour; partly soluble in water.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Sinks in water.

Molecular Weight: Not applicable
Melting Range (°C): Not available
Solubility in water (g/L): Partly miscible
pH (1% solution): Not available
Volatile Component (%vol): <22 g/l (VOC)
Relative Vapour Density (air=1): Not available
Lower Explosive Limit (%): Not available
Autoignition Temp (°C): Not available
State: Liquid

Boiling Range (°C): Not available
Specific Gravity (water=1): 1.1
pH (as supplied): 11
Vapour Pressure (kPa): <0.01 @23C
Evaporation Rate: Not available
Flash Point (°C): >100 CC
Upper Explosive Limit (%): Not available
Decomposition Temp (°C): Not available
Viscosity: Not Available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

Causes burns.

Risk of serious damage to eyes.

Harmful in contact with skin and if swallowed.

CHRONIC HEALTH EFFECTS

May cause SENSITISATION by skin contact.

May cause harm to the unborn child.

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

SODIUM ALUMINOSILICATE:

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

TOXICITY

Oral (rat) LDLo: >32000 mg/kg

IRRITATION

Nil Reported [Kirk]

ISOPHORONE DIAMINE:

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

TOXICITY

Oral (rat) LD50: 1030 mg/kg [Manufacturer HUE]

IRRITATION

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

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

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.

The material may produce respiratory tract irritation. Symptoms of pulmonary irritation may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation.

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.

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Section 11 - TOXICOLOGICAL INFORMATION

3-DIMETHYLAMINOPROPYLAMINE:

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

TOXICITY

Oral (rat) LD50: 1870 mg/kg

IRRITATION

Skin (rabbit): 0.1 mg/24h - Open

Eye (rabbit): 5 mg - Moderate

TETRAETHYLENEPENTAMINE:

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

TOXICITY

Oral (rat) LD50: 3990 mg/kg

Dermal (rabbit) LD50: 660 mg/kg

IRRITATION

Skin (rabbit): 495 mg SEVERE

Skin (rabbit): 5 mg/24h SEVERE

Eye (rabbit): 5 mg Moderate

Eye (rabbit): 100 mg/24h Moderate

Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

The material may produce severe 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) thickening of the epidermis.

Handling ethyleneamine products is complicated by their tendency to react with other chemicals, such as carbon dioxide in the air, which results in the formation of solid carbamates. Because of their ability to produce chemical burns, skin rashes, and asthma-like symptoms, ethyleneamines also require substantial care in handling.

Higher molecular weight ethyleneamines are often

handled at elevated temperatures further increasing the possibility of vapor exposure to these compounds.

Because of the fragility of eye tissue, almost any eye contact with any ethyleneamine may cause irreparable damage, even blindness. A single, short exposure to ethyleneamines, may cause severe skin burns, while a single, prolonged exposure may result in the material being absorbed through the skin in harmful amounts. Exposures have caused allergic skin reactions in some individuals. Single dose oral toxicity of ethyleneamines is low. The oral LD50 for rats is in the range of 1000 to 4500 mg/kg for the ethyleneamines.

In general, the low-molecular weight polyamines have been positive in the Ames assay, increase sister chromatid exchange in Chinese hamster ovary (CHO) cells, and are positive for unscheduled DNA synthesis although they are negative in the mouse micronucleus assay. It is believed that the positive results are based on its ability to chelate copper.

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.

Triethylenetetramine (TETA) is a severe irritant to skin and eyes and induces skin sensitisation.

TETA is of moderate acute toxicity: LD50(oral, rat) > 2000 mg/kg bw, LD50(dermal, rabbit) = 550 - 805 mg/kg bw. Acute exposure to saturated vapour via inhalation was tolerated without impairment. Exposure to aerosol leads to reversible irritations of the mucous membranes in the respiratory tract.

Following repeated oral dosing via drinking water only in mice but not in rats at concentration of 3000 ppm there were signs of impairment. The NOAEL is 600 ppm [92 mg/kg bw (oral, 90 days)]. Lifelong dermal application to mice (1.2 mg/mouse) did not result in tumour formation.

There are differing results of the genetic toxicity for TETA. The positive results of the in vitro tests may be the result of a direct genetic action as well as a result of an interference with essential metal ions. Due to this uncertainty of the in vitro tests, the genetic toxicity of TETA has to be assessed on the basis of in vivo tests.

The in vivo micronucleus tests (i.p. and oral) and the SLRL test showed negative results.

There are no human data on reproductive toxicity (fertility assessment). The analogue diethylenetriamine had no effects on reproduction. TETA shows developmental toxicity in animal studies if the chelating property of the substance is effective. The NOEL is 830 mg/kg bw (oral).

Experience with female patients suffering from Wilson's disease demonstrated that no miscarriages and no foetal abnormalities occur during treatment with TETA..

In rats, there are several studies concerning developmental toxicity. The oral treatment of rats with 75, 375 and 750 mg/kg resulted in no effects on dams and fetuses, except slight increased fetal body weight. After oral treatment of rats with 830 or 1670 mg/kg bw only in the highest dose group increased foetal abnormalities in 27/44 fetus (69.2 %) were recorded, when simultaneously the copper content of the feed was reduced. Copper supplementation in the feed reduced significant the foetal abnormalities of the highest dose group to 3/51 (6.5 % foetus). These findings suggest that the developmental toxicity is produced as a secondary consequence of the chelating properties of TETA.

Tetraethylenepentamine (TEPA) has a low acute toxicity when administered orally to rats (LD50 = 3250 mg/kg). In an acute inhalation toxicity study with saturated vapor and whole body exposure, the LC50 was calculated to be >9.9 ppm (highest dose tested). TEPA is corrosive to the skin and eyes of rabbits. TEPA is a skin sensitiser in the guinea pig. Dermal acute toxicity LD50 values in the rabbit range from 660 - 1260 mg/kg. The higher toxicity via the dermal route is most likely due to the corrosive nature of TEPA to the skin whereas TEPA would be neutralized by stomach acid.

The results of a 28-day repeated dose dermal toxicity study of TEPA indicated a systemic toxicity NOEL of 200 mg/kg/day and a dermal toxicity NOEL (local) of 50 mg/kg/day. The dermal LOAEL was 100 mg/kg/day. In addition, in a repeat dose study of TETA administered in drinking water to male and female rats for 90-92 days, the NOEL was 276 mg/kg/day in males and 352 mg/kg/day in females, the highest dose administered with the NIH-31 diet (several diets were used to study the effects of copper deficiency versus toxicity directly to TEPA). In this same study in mice the NOEL was 487 mg/kg/day in males and 551 mg/kg/day in females, the highest dose administered. A lifetime study was conducted via dermal administration in fifty male mice with a solution of 35% TEPA. There were 20 cases of hyperkeratosis, 13 cases of epidermal necrosis and no evidence of dermal hyperplasia.

There were no data available for TEPA for reproductive and developmental toxicity. As a result, data on triethylenetetramine (TETA) was used to address these endpoints. TETA data showed no effects on reproductive organs in rats up to 276 mg/kg/day (males) and 352 mg/kg/day (females) and in mice (up to 500 mg/kg/day) when administered in drinking water. TETA was not considered a developmental toxicant via dermal administration in rabbits at maternally toxic doses up to 125 mg/kg/day but showed developmental toxicity in rats at maternally toxic doses of 830 or 1660 mg/kg/day via drinking water. The maternal and foetal toxicity was most likely due to copper deficiency and zinc toxicity at these levels. Subsequent studies where the diet was

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Section 11 - TOXICOLOGICAL INFORMATION

supplemented with copper resulted in a decrease of foetal abnormalities. There were no standard fertility studies available. However, there were no effects on the gonads observed in a 90-day drinking water study in rats and mice as described above. In the Ames Salmonella assay, TEPA was found to be positive both with and without metabolic activation. TEPA was found to increase sister chromatid exchange in CHO cells and was considered positive in a UDS assay using rat hepatocytes. TEPA was not considered genotoxic in the mouse micronucleus assay and had equivocal results in the two dominant lethal assays in *Drosophila melanogaster*. Again, it is believed that the positive results are based upon TEPA's ability to chelate copper.

Section 12 - ECOLOGICAL INFORMATION

No data

Section 13 - DISPOSAL CONSIDERATIONS

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: COMBUSTIBLE LIQUID, regulated under AS1940 for Bulk Storage purposes only.
HAZCHEM: None

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

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: S5

REGULATIONS

Mapei Kerapoxy Component B (CAS: None):

No regulations applicable

sodium aluminosilicate (CAS: 1344-00-9) is found on the following regulatory lists;

Australia Exposure Standards

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 MARPOL 73/78 (Annex II) - List of Other Liquid Substances

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

sodium aluminosilicate (CAS: 12003-51-9) is found on the following regulatory lists;

Australia Exposure Standards

isophorone diamine (CAS: 2855-13-2) is found on the following regulatory lists;

Australia Hazardous Substances

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5

GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk

International Council of Chemical Associations (ICCA) - High Production Volume List

OECD Representative List of High Production Volume (HPV) Chemicals

3-dimethylaminopropylamine (CAS: 109-55-7) is found on the following regulatory lists;

Australia Hazardous Substances

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5

OECD Representative List of High Production Volume (HPV) Chemicals

tetraethylenepentamine (CAS: 112-57-2) is found on the following regulatory lists;

Australia Hazardous Substances

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix E (Part 2)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Appendix F (Part 3)

Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 5

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Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name
sodium aluminosilicate

CAS
1344- 00- 9, 12003- 51- 9

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.

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