Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
DENTSPLY TPH 3 MICRO MATRIX RESTORATIVE

SYNONYMS

PRODUCT USE
Dental restoration.

SUPPLIER
Company: Dentsply (Australia) Pty Ltd (ABN: 15 004 290 322)
Address:
11-21 Gilby Road
Mount Waverley
VIC, 3149
AUS
Telephone: +61 3 9538 8240
Emergency Tel: 0413 830 239
Fax: +61 3 9538 8260

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
None

RISK
Irritating to eyes, respiratory system and skin.
Inhalation may produce health damage*.
Possible respiratory and skin sensitiser*.
May be harmful to the foetus/ embryo*.
* (limited evidence).

SAFETY
Keep container in a well ventilated place.
Avoid exposure - obtain special instructions before use.
To clean the floor and all objects contaminated by this material, use water and detergent.
Keep container tightly closed.
Take off immediately all contaminated clothing.
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).
If you feel unwell contact Doctor or Poisons Information Centre. (Show the label if possible).

continued...

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
soluble amorphous glass wool	65997-17-3.	<50
frits chemical	65997-18-4	<30
2,2-bis[4-(2-methacryloxy)ethoxy)phenyl]propane	24448-20-2	<10
triethylene glycol dimethacrylate	109-16-0	<10
urethane modified Bis-GMA dimethacrylate		<10
silica amorphous, fumed	68611-44-9	<3
silica, dimethylsiloxane treated	67762-90-7	<3
titanium dioxide	13463-67-7	<1
inorganic iron oxides		NotSpec
colourants		NotSpec

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.
- 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.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

continued...

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 course.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- 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.

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

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
Gas tight chemical resistant suit.
Limit exposure duration to 1 BA set30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable labelled container for waste disposal.

MAJOR SPILLS
Moderate hazard.
- Clear area of personnel and move upwind.
- 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 course.
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.

continued...

- If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (ppm)	Revised IDLH Value (mg/m3)
Silica, amorphous		3,000
Titanium dioxide		5,000

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)
The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

triethylene glycol dimethacrylate	500 mg/m³
silica amorphous, fumed	500 mg/m³
silica, dimethylsiloxane treated	500 mg/m³
titanium dioxide	500 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

triethylene glycol dimethacrylate	50 mg/m³
silica amorphous, fumed	100 mg/m³
silica, dimethylsiloxane treated	125 mg/m³
titanium dioxide	15 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

triethylene glycol dimethacrylate	30 mg/m³
silica amorphous, fumed	6 mg/m³
silica, dimethylsiloxane treated	15 mg/m³
titanium dioxide	15 mg/m³

The threshold concentration below which most people. will experience no appreciable risk of health effects:

triethylene glycol dimethacrylate	10 mg/m³
silica amorphous, fumed	2 mg/m³
silica, dimethylsiloxane treated	6 mg/m³
titanium dioxide	15 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according exceed the following cutoffs

Very Toxic (T+) >= 0.1%		Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

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.

continued...

- 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.
- Avoid smoking, naked lights or ignition sources.
- 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.

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

SUITABLE CONTAINER

Packaging as recommended by manufacturer.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- 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.

Protect from light.

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
Australian Exposure Standards	Titanium dioxide		10				
Australian Exposure Standards	Silica - Amorphous, Fume (thermally generated) (respirable dust) (g)		2				
Australian Exposure Standards	Silica - Amorphous, Fume (thermally generated) (respirable dust) (g)		2				
Australian Exposure	Silica -		2				

continued...

Standards	Amorphous, Fume (thermally generated) (respirable dust) (g)	
Australian Exposure Standards	Titanium dioxide	10

No data available: Dentsply TPH 3 Micro Matrix Restorative as (CAS: 65997-17-3.) / (CAS: 65997-18-4) / (CAS: 244
No data available: soluble amorphous glass wool as (CAS: 65997-17-3)
No data available: frits chemical as (CAS: 65997-18-4)
No data available: 2,2-bis[4-(2-methacryloxy)ethoxy)phenyl]propane as (CAS: 24448-20-2)
No data available: triethylene glycol dimethacrylate as (CAS: 109-16-0)
No data available: silica amorphous, fumed as (CAS: 60842-32-2)
No data available: silica, dimethylsiloxane treated as (CAS: 67762-90-7)
Not available. Refer to individual constituents.

EXPOSURE STANDARDS FOR MIXTURE

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:
Composite Exposure Standard for Mixture (TWA) :2.0784 mg/m³.
"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:
Composite Exposure Standard for Mixture (TWA) (mg/m³):
Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.
If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.
Component Breathing Zone ppm Breathing Zone mg/m³ Mixture Conc (%).

Component	Breathing Zone (mg/m³)	Mixture Conc (%)
soluble amorphous glass wool	1.9608	50.0
silica amorphous, fumed	0.1176	3.0

INGREDIENT DATA

SOLUBLE AMORPHOUS GLASS WOOL:
ES TWA: 0.5 respirable fibres per millilitre of air (f/mL) for synthetic mineral fibres SMF (MMMF); concentration to be determined in accordance with the NOH&S Commission's "Membrane Filter Method for the Estimation of Airborne Synthetic Fibres"
ES TWA: 2 mg/m³ inspirable dust as determined in accordance with Australian Standard AS 3640
TLV TWA: 1 f/cc A3 (respirable glass wool fibres, length >5um; aspect ratio >=3:1**)
** - as determined by the membrane filter method at 400-450X magnification (4-mm objective) phase contrast illumination.
CAUTION: This substance has been classified by the ACGIH as A3 Animal Carcinogen (at relatively high doses).

FRITS CHEMICAL:
The wide-ranging effects of antimony compounds have made it difficult to recommend an exposure standard which characterises the toxicology of these substances. One criteria, reflecting the irritant properties of antimony

continued...

pentachloride, produced a calculated value of 5.0 mg/m³ (as antimony), which on the basis of experience was felt to be too high but did act as an "out-rider". The present value reflects this thinking.
Based on a study in which the threshold for minimum increase in bone density due to fluoride exposure was 3.38 mg/m³ (as fluoride), the present TLV-TWA has been adopted to prevent irritant effects and disabling bone changes. There is also support for the proposition that occupational exposure below the TLV will have no adverse effect on pregnant women or off-spring. IARC has classified fluorides in drinking water as Group 3 carcinogens; i.e. Not classifiable as to its carcinogenicity to humans. Equivocal evidence of carcinogenic activity (osteosarcoma) has been found in male rats administered sodium fluoride in drinking water. (0-175 ppm) Evidence was not found in female rats or in male or female mice.
The lead concentration in air is to be maintained so that the lead concentration in workers' blood remains below 0.060 mg/100 g of whole blood. The recommended TLV-TWA has been derived following a review of reports of adverse effects on reproduction, blood-pressure and other end-points of toxicity. A particular focus was an assessment of pre-natal blood lead (PbB) levels and post-natal cognitive levels. The fact that lead is a cumulative toxicant which can produce subtle, persistent and apparently permanent effects in the off-spring of lead exposed women is of particular concern. A current view holds that the identification of the PbB levels, that are protective during a working lifetime, is a necessary prerequisite in the recommendation of the TLV because PbB values, rather than workplace air lead concentrations, are more clearly related to adverse health effects.
(see Biological Exposure Index - BEI - in "Advice to Doctor".).
A number of studies have shown that susceptibility to the effects of manganese at or about 1 - 5 mg/m³ (TWA) can lead to clinical manifestations of manganism or more commonly to the development of indicators of sub-clinical manganism (e.g. hand tremor, exaggerated reflexes, short-term memory deficits, poor psychomotor performance). Controlling long-term exposure to the recommended ES TWA level or below should provide protection for those individuals susceptible to neurological effects of prolonged exposure.
NOTE: Detector tubes for nickel, measuring in excess of 0.25 mg/m³ (as Ni) are commercially available.
Use control measures / protective gear to avoid personal contact. Animal inhalation studies with insoluble nickel dusts (other than nickel sulfide) at concentrations of 1 to 3 mg/m³ show no difference in respiratory cancer between exposed and control animals.
These studies do not provide evidence that there is no excess risk of lung and nasal cancer - in view of limited exposure data and the absence of guidance for a TLV based on epidemiological studies of nickel induced respiratory tract cancer, it has been necessary to incorporate the results of animal studies that have demonstrated the production of pulmonary pathology. These studies have shown consistent pulmonary damage following inhalation of 0.1 to 1 mg/m³ insoluble inorganic nickel compounds. Individuals who may be hypersusceptible or otherwise unusually responsive to industrial chemicals may not be adequately protected against adverse health effects from nickel or its compounds at concentrations below the recommended or proposed TLV.
OSHA concluded that the recommended TLV-TWA and STEL would protect workers from any significant risk of pulmonary effects. NIOSH conclude that a separate limit should be considered for zirconium tetrachloride (because of the irritancy of hydrogen chloride derived from hydrolysis). This was based on a 60-day inhalation study at 6 mg/m³ zirconium tetrachloride which found an increase in mortality of rats and guinea pigs due to respiratory infection and reductions of borderline statistical significance in circulating hemoglobin and erythrocyte

continued...

counts in dogs.

2,2-BIS[4-(2-METHACRYLOXY)ETHOXY)PHENYL]PROPANE:
CEL TWA: 1 mg/m³ [compare WEEL-TWA* for multifunctional acrylates (MFAs)]
Exposure to MFAs has been reported to cause contact dermatitis in humans and serious eye injury in laboratory animals. Exposure to some MFA-resin containing aerosols has also been reported to cause dermatitis. As no assessment of the possible effects of long-term exposure to aerosols was found, a conservative Workplace Environmental Exposure Level (WEEL) was suggested by the American Industrial Hygiene Association (AIHA).

TRIETHYLENE GLYCOL DIMETHACRYLATE:
No exposure limits set by NOHSC or ACGIH.

SILICA AMORPHOUS, FUMED:
CEL TWA: 6 mg/m³
Dusts not otherwise classified, as inspirable dust;
ES TWA: 10 mg/m³.

SILICA, DIMETHYLSILOXANE TREATED:
Dusts not otherwise classified, as inspirable dust;
ES TWA: 10 mg/m³.

TITANIUM DIOXIDE:
IDLH Level: 5000 mg/m³
Animal studies at 10 mg/m³ show no significant fibrosis, possibly reversible tissue reaction and the architecture of lung air spaces remains intact.

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 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.
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.
- Barrier cream.

continued...

- Skin cleansing cream.
- Eye wash unit.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	-AUS P	-
1000	50	-	-AUS P
5000	50	Airline *	-
5000	100	-	-2 P
10000	100	-	-3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand.

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

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Coloureld, high viscosity liquid with a characteristic odour;does not mix with 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): Immiscible
pH (1% solution): Not Applicable
Volatile Component (%vol): Not Available
Relative Vapour Density (air=1): Not Available
Lower Explosive Limit (%): Not Available
Autoignition Temp (°C): Not Available

Boiling Range (°C): Not Available
Specific Gravity (water=1): 2.1
pH (as supplied): Not Applicable
Vapour Pressure (kPa): Not Available
Evaporation Rate: Not Available
Flash Point (°C): Not Available
Upper Explosive Limit (%): Not Available
Decomposition Temp (°C): Not Available

continued...

State: Liquid

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

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 (e.g 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

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

SKIN

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.
The material may accentuate any pre-existing dermatitis condition.
Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.
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

No report of respiratory illness in humans as a result of exposure to

continued...

multifunctional acrylates has been found. Similarly evidence of systemic damage does not appear to exist.

CHRONIC HEALTH EFFECTS

All multifunctional acrylates (MFA) produce skin discomfort and are known or suspected skin sensitisers. Aerosols generated in the industrial process are reported to produce dermatitis - vapours generated by the heat of milling may also occur in sufficient concentration to produce dermatitis. Because exposure to industrial aerosols of MFA may also include exposure to various resin systems, photo-initiators, solvents, hydrogen-transfer agents, stabilisers, surfactants, fillers and polymerisation inhibitors, toxic effects may arise due to a range of chemical actions. Sensitisation may give severe responses to very low levels of exposure, in situations where exposure may occur.

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.
unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

SOLUBLE AMORPHOUS GLASS WOOL:
EEC directive 97/69/EC exonerates this material from any carcinogenic classification. [Manufacturer]
Rats have been exposed 6 hours per day, 5 days per week during 2 years at an average concentration of 200 fibres per mL (200 to 300 times higher than concentrations found in manufacturing plants). Preliminary findings are:
No formation of fibrous tissue.
No significant elevated tumour incidence over the negative control group.
Reversible cellular changes similar to the effects observed after inhalation of inert dust. [Manufacturer]
glasswool, mineral wool, rockwool, slagwool
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.

FRITS CHEMICAL:
No significant acute toxicological data identified in literature search.

2,2-BIS[4-(2-METHACRYLOXY)ETHOXY)PHENYL]PROPANE:
No significant acute toxicological data identified in literature search.
Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH2=CHCOO or CH2=C(CH3)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing.
This position has now been revised and acrylates and methacrylates are no longer de facto carcinogens.

TRIETHYLENE GLYCOL DIMETHACRYLATE:

TOXICITY	IRRITATION
Oral (rat) LD50: 10837 mg/kg	Nil Reported
Oral (mouse) LD50: 10750 mg/kg	

SILICA AMORPHOUS, FUMED:

TOXICITY	IRRITATION
Oral (rat) LD50: >5000 mg/kg	Nil Reported

continued...

[Wacker]

SILICA, DIMETHYLSILOXANE TREATED:

TOXICITY	IRRITATION
Oral (rat) LD50: >5000 mg/kg	Skin: 0/8 non-irritating
Eyes: 0.7/110 @ 24hr Draize non-irritating	

[Cabot]

TITANIUM DIOXIDE:

TOXICITY	IRRITATION
Skin (human): 0.3 mg/3d-I mild	

Section 12 - ECOLOGICAL INFORMATION

Transport and distribution of nickel particulates between different environmental compartments, is strongly influenced by particle size. Fine particulate matter has a longer residence time in the environment and is carried a long distance from its source; larger particles are deposited near the emission source. Atmospheric residence time for nickel particulates is estimated to be 5.4-7.9 days. Water solubility and bioavailability is affected by soil pH; decrease in pH generally mobilises nickel, thus acid rain can mobilise nickel from the soil and increase nickel concentrations in ground water. Nickel bioaccumulates in the food chain but is not bioconcentrated.
Drinking Water Standards:
Nickel 50 ug/l (UK max.)
20 ug/l (WHO guideline)
Soil Guidelines:
Dutch Criteria: 35 mg/kg (target)
210 mg/kg (intervention).
DO NOT discharge into sewer or waterways.

Section 13 - DISPOSAL CONSIDERATIONS

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

Section 14 - TRANSPORTATION INFORMATION

Dangerous Goods Class: None
Subrisk: None
UN/NA Number: None
Packing Group: None
Labels Required:
Additional Shipping Information:
  International Transport Regulations:
  IMO Dangerous Goods class: None
  IMO Packing group: None
IATA Dangerous goods class: None
Cargo Instructions:
Cargo Max:
Passenger Instructions:

continued...

Passenger Max:
Special Provisions: None, None

HAZCHEM

None

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

soluble amorphous glass wool (CAS: 65997-17-3) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)
Australia High Volume Industrial Chemical List (HVICL)

frits chemical (CAS: 65997-18-4) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)
Australia High Volume Industrial Chemical List (HVICL)
Australia New Zealand Food Standards Code (Code) - Food Additives - Contaminants and Natural Toxicants

2,2-bis[4-(2-methacryloxy)ethoxy)phenyl]propane (CAS: 24448-20-2) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)

triethylene glycol dimethacrylate (CAS: 109-16-0) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)

silica amorphous, fumed (CAS: 68611-44-9) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)
Australian Exposure Standards
silica amorphous, fumed (CAS: 112945-52-5) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)
Australia High Volume Industrial Chemical List (HVICL)

silica, dimethylsiloxane treated (CAS: 67762-90-7) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)

titanium dioxide (CAS: 13463-67-7) is found on the following regulatory lists
Australian Inventory of Chemical Substances (AICS)
Australia High Volume Industrial Chemical List (HVICL)

No data available for silica amorphous, fumed as CAS: 60842-32-2.

continued...

Section 16 - OTHER INFORMATION

Issue Date: 26-Oct-2005
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