Dentsply EsthetX HD

Dentsply (Australia) Pty Ltd

Chemwatch Hazard Alert Code: **3**

Chemwatch: **22-5368**
Version No: **2.1.1.1**
Safety Data Sheet according to WHS and ADG requirements

Issue Date: **01/01/2013**
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S.GHS.AUS.EN

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

Product Identifier

Product name	Dentsply EsthetX HD
Synonyms	EsthetX HD High Definition Micro Matrix Restorative
Other means of identification	Not Available

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

Relevant identified uses	Light curing composite/dental filling material

Details of the supplier of the safety data sheet

Registered company name	Dentsply (Australia) Pty Ltd
Address	11-21 Gilby Road Mount Waverley VIC 3149 Australia
Telephone	1300 55 29 29
Fax	+61 3 9538 8260
Website	www.dentsply.com.au
Email	clientservices@dentsply.com

Emergency telephone number

Association / Organisation	Poisons Information Centre (AUSTRALIA)
Emergency telephone numbers	13 11 26 - AUSTRALIA (24 hour service)
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

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

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	0	
Toxicity	2	
Body Contact	2	
Reactivity	1	
Chronic	3	

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

Poisons Schedule	Not Applicable
Classification [1]	Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, Carcinogenicity Category 2, Reproductive Toxicity Category 1A, Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI*

Label elements

GHS label elements	
SIGNAL WORD	**DANGER**

Hazard statement(s)

H302	Harmful if swallowed.
H332	Harmful if inhaled.
H315	Causes skin irritation.

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H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary statement(s) Storage

P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
65997-17-3	<50	glass fibres loose - special purpose
65997-18-4	<30	frits chemicals, lead containing
109-16-0	<20	triethylene glycol dimethacrylate
Not Available	<10	urethane modified bis-GMA dimethacrylate
68611-44-9	<5	silica amorphous, fumed
7631-86-9	<5	silica amorphous

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	▸ Gently brush or vacuum off adherent fibres. ▸ Wash affected areas thoroughly with water (and soap if available). ▸ Seek medical attention if irritation exists and persists.
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. ▸ 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.
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.
Mineral fibres are a mechanical irritant, and are not expected to produce any chronic health effects from acute exposures.
Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.
Lung function should be monitored, periodically, in individuals chronically exposed to fibres in an occupational setting

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SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Water spray or fog.
- Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.

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	▸ When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles. ▸ When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear full body protective clothing with breathing apparatus. ▸ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	Mineral fibres exhibit low thermal conductivity, low heat storage, and thermal shock resistance. In fire situations they withstand high temperatures without burning. Thermal decomposition is associated with polymeric binders and facings which may be present in the article. The packaging, facings and resin may smoulder, decompose or burn. Depending upon the facing, decomposition may produce toxic fumes of carbon monoxide (CO), carbon dioxide (CO2), phenols,formaldehyde and other toxic gases. Vinyl facing will release hydrogen chloride gas. Combustion products include: , hydrogen fluoride , silicon dioxide (SiO2) , other pyrolysis products typical of burning organic material.
HAZCHEM	Not Applicable

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Wear impervious gloves and safety goggles. ▸ Trowel up/scrape up.
Major Spills	▸ 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.

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	▸ Limit all unnecessary personal contact. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ When handling **DO NOT** eat, drink or smoke.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	▸ Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

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Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Precipitated silica / Silica - Amorphous: Silica gel / Precipitated silica / Silica gel	10 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Diatomaceous earth (uncalcined) / Diatomaceous earth (uncalcined)	10 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Fume (thermally generated)(respirable dust)	2 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	silica amorphous	Silica - Amorphous: Fumed silica (respirable dust) / Fumed silica (respirable dust)	2 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
glass fibres loose - special purpose	Fibrous glass; (Fiber glass; Glass frit; Synthetic vitreous fibers)	15 mg/m3	170 mg/m3	990 mg/m3
triethylene glycol dimethacrylate	Methacrylic acid, diester with triethylene glycol; (Polyester TGM3)	33 mg/m3	360 mg/m3	2,100 mg/m3
silica amorphous, fumed	Silica, amorphous fumed	18 mg/m3	100 mg/m3	630 mg/m3
silica amorphous	Silica gel, amorphous synthetic	18 mg/m3	200 mg/m3	1,200 mg/m3
silica amorphous	Silica, amorphous fumed	18 mg/m3	100 mg/m3	630 mg/m3
silica amorphous	Siloxanes and silicones, dimethyl, reaction products with silica; (Hydrophobic silicon dioxide, amorphous)	120 mg/m3	1,300 mg/m3	7,900 mg/m3
silica amorphous	Silica, amorphous fume	45 mg/m3	500 mg/m3	3,000 mg/m3
silica amorphous	Silica amorphous hydrated	18 mg/m3	220 mg/m3	1,300 mg/m3

Ingredient	Original IDLH	Revised IDLH
glass fibres loose - special purpose	Not Available	Not Available
frits chemicals, lead containing	700 mg/m3	100 mg/m3
triethylene glycol dimethacrylate	Not Available	Not Available
urethane modified bis-GMA dimethacrylate	Not Available	Not Available
silica amorphous, fumed	N.E. mg/m3 / N.E. ppm	3,000 mg/m3
silica amorphous	N.E. mg/m3 / N.E. ppm	3,000 mg/m3

Exposure controls

Appropriate engineering controls	▸ Provide good ventilation (either forced or natural) ▸ Where possible, enclose sources of dust and provide dust extraction at the source. ▸ Restrict access to work areas involved in handling man-made mineral fibres and ensure that adequate training, in the handling of such materials, has been provided. ▸ Use operating procedures which limit the generation of dusts. ▸ When working with unbonded fibres, local exhaust ventilation is generally a requirement. ▸ If measured respirable fibre is less than the recommended occupational exposure level, wear approved dust respirator Class P1 (half-face). ▸ Use a Class P2 or P3 respirator (full-face), where exposure is above the recommended occupational exposure level ▸ Use an approved respirator if power tools without dust extraction or containment are used.
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 lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	**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. ▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. Wear protective gloves, e.g. PVC.
Body protection	See Other protection below
Other protection	▸ Disposable coveralls or long sleeve, loose fitting protective clothing, e.g. overalls (launder clothing separately from other clothing). ▸ When working above head height, use head covering. ▸ Minimise dust generation by using sharp hand cutting tools if possible. ▸ Powered tools (e.g. saws etc.) should only be used if fitted with dust extraction and containment equipment. ▸ Personnel involved in the installation of unbonded ceramic materials should wear disposable coveralls, or long-sleeve loose fitting clothing, gloves and suitable respirator. Such equipment should also be used by personnel employed in removing materials which have not become embrittled. ▸ Personnel involved in the removal of embrittled material should in addition, use a full-face cartridge respirator, or full-face powered air purifying respirator,

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	▸ each with suitable particulate filter, or a full-face pressure demand airline respirator.
Thermal hazards	Not Available

Respiratory protection

None under normal operating conditions.

- 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 - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. 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.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

Use appropriate respiratory protective equipment against excessive concentrations of fibrous dusts.

Airborne Fibre Concentration	Full Face P2	Full Face P3
Above Exposure Limit Value	Recommended	-
For short-term operation where excursions above the limit value are less than factor of 10		Required

- Correct respirator fit is essential to obtain adequate protection.
- Even though the recommended level for respirable fibre is not exceeded in normal conditions, respiratory protection is advisable in dusty areas.
- In very dusty conditions and confined spaces greater comfort may be afforded by a full-face powered air-purifying respirator.
- Preforms (batts) designed for high temperature applications (above 177 degrees Celsius), may release gases (CO2, formaldehyde, amines) irritating to the eyes, nose and throat during initial heat-up. In confined or poorly ventilated areas, use air supplied respirators during the first heat-up cycle.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Various shades of viscous paste with a characteristic sweet acrylic odour; does not mix with water.

Physical state	Non Slump Paste	**Relative density (Water = 1)**	2.1
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Applicable	**Decomposition temperature**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Applicable	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Applicable	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Applicable	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Applicable	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water (g/L)	Immiscible	**pH as a solution (1%)**	Not Applicable
Vapour density (Air = 1)	Not Available	**VOC g/L**	217.31

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	▸ Unstable in the 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	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the

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	individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. No report of respiratory illness in humans as a result of exposure to multifunctional acrylates has been found. Loose and granular forms produce more dust than preforms (batts) but handling of batts results in fibre dislodgement and dusting. Nose and throat irritation may be transitory. Material may be dampened with a dedusting oil to mitigate problems. There is little evidence for acute toxicity after inhalation of mineral fibres. Effects on lungs are significantly enhanced in the presence of respirable particles. The dust may produce upper respiratory tract discomfort. Nose and throat discomfort may be transitory.
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	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition All multifunctional acrylates (MFA) produce skin disorders and sensitise the skin and inflammation. Vapours generated by the heat of milling may occur in sufficient concentration to produce inflammation. Open cuts, abraded or irritated skin should not be exposed to this material Man-made mineral fibres may produce mild skin reaction with itching or redness of the skin. This is due to the physical and not from the chemical nature of the substance. They occur particularly around wrists, collars and waistbands, are worsened by sweating and heat, and relieved within a short time after exposure ceases. When products are handled continually, the skin itching often diminishes.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Harmful: danger of serious damage to health by prolonged exposure through inhalation. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Loose and granular forms produce more dust than batts, but handling of batts results in fibre dislodgement and production of dusts. MMMF is unlikely to be acutely toxic if inhaled. Amorphous silicas generally are less hazardous than crystalline silicas, but the former can be converted to the latter on heating and subsequent cooling. Inhalation of dusts containing crystalline silicas may lead to silicosis, a disabling lung disease that may take years to develop. Inhaled synthetic mineral fibres (SMFs) generally show some level of biopersistence, resisting changes in number, dimension, surface chemistry, chemical composition, surface area and other characteristics, depending on their composition. Altering any of the above changes a fibre's residence time in the lung and the lung's response to it. Overexposure to respirable dust may cause coughing, wheezing, difficulty in breathing and impaired lung function. Chronic symptoms may include decreased vital lung capacity, chest infections Repeated exposures, in an occupational setting, to high levels of fine- divided dusts may produce a condition known as pneumoconiosis which is the lodgement of any inhaled dusts in the lung irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50,000 inch), are present. Lung shadows are seen in the X-ray.

Dentsply EsthetX HD	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
glass fibres loose - special purpose	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
frits chemicals, lead containing	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Not Available
	Inhalation (monkey) LC50: 0.03 mg/L15 min[1]	
	Inhalation (monkey) LC50: 0.0467 mg/L15 min[1]	
	Inhalation (monkey) LC50: 0.204 mg/L15 min[1]	
	Inhalation (monkey) LC50: 0.23 mg/L15 min[1]	
	Inhalation (monkey) LC50: 0.94 mg/L15 min[1]	
	Inhalation (mouse) LC50: >0.00902 mg/L15 min[1]	
	Inhalation (rabbit) LC50: >0.0224 mg/L15 min[1]	
	Inhalation (rat) LC50: >1.864 mg/l/4hr[1]	
	Inhalation (rat) LC50: >1.895 mg/l/4hr[1]	
	Inhalation (rat) LC50: >3.227 mg/l/4hr[1]	
	Inhalation (rat) LC50: >3.407 mg/l/4hr[1]	
	Inhalation (rat) LC50: >5.05 mg/l/4hr[1]	
	Inhalation (rat) LC50: >5.273 mg/l/4hr[1]	
	Inhalation (rat) LC50: 0.025 mg/L30 min[1]	
	Oral (rat) LD50: >63-<259 mg/kg>[1]	
triethylene glycol dimethacrylate	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: 10837 mg/kg[2]	Not Available
silica amorphous, fumed	**TOXICITY**	**IRRITATION**
	Oral (rat) LD50: >5000 mg/kg[2]	Not Available

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Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

GLASS FIBRES LOOSE - SPECIAL PURPOSE	MMMF are manufactured to definite fibre diameters and cannot split along their length rather they break across and form small particles not needles [FARIMA]. NOTE: Carcinogenic by RTECS criteria (rat inhalation studies). Equivocal carcinogen or neoplastic agent by RTECS criteria (rat implantation studies)
FRITS CHEMICALS, LEAD CONTAINING	No significant acute toxicological data identified in literature search.
TRIETHYLENE GLYCOL DIMETHACRYLATE	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. 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.
SILICA AMORPHOUS, FUMED	For silane, dichloro-methyl-, reaction products with silica: Acute oral toxicity is very low for treated silica. Animals who inhaled these substances recovered from inflammatory changes in the airway when exposure ended. Repeated inhalation in animals caused inflammation and scarring of the lungs with enlarged lymph nodes. Treated silica does not cause mutations or genetic damage and has not been shown to cause cancer.
SILICA AMORPHOUS	Reports indicate high/prolonged exposures to amorphous silicas induced lung fibrosis in experimental animals; in some experiments these effects were reversible. [PATTYS]
Dentsply EsthetX HD & TRIETHYLENE GLYCOL DIMETHACRYLATE	The following information refers to contact allergens as a group and may not be specific to this product. 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. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.
Dentsply EsthetX HD & GLASS FIBRES LOOSE - SPECIAL PURPOSE	The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. For fibre glass wool: In October 2001, IARC classified fiber glass wool as Group 3, "not classifiable as to its carcinogenicity to humans." The 2001 decision was based on current human and animal research that shows no association between inhalation exposure to dust from fibre glass wool and the development of respiratory disease. This is a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of fiber glass. NTP and ACGIH have not yet reviewed the IARC reclassification or the most current fibre glass health research; at this time, both agencies continue to classify glass wool based on the earlier animal injection studies.
Dentsply EsthetX HD & SILICA AMORPHOUS, FUMED & SILICA AMORPHOUS	For silica amorphous: When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated. If swallowed, the vast majority of SAS is excreted in the faeces and there is little accumulation in the body. Following absorption across the gut, SAS is eliminated via urine without modification in animals and humans. SAS is not expected to be broken down (metabolised) in mammals.
GLASS FIBRES LOOSE - SPECIAL PURPOSE & SILICA AMORPHOUS	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.

Acute Toxicity	✔	**Carcinogenicity**	✔
Skin Irritation/Corrosion	✔	**Reproductivity**	✔
Serious Eye Damage/Irritation	✔	**STOT - Single Exposure**	⊘
Respiratory or Skin sensitisation	✔	**STOT - Repeated Exposure**	✔
Mutagenicity	⊘	**Aspiration Hazard**	⊘

Legend: ✘ *– Data available but does not fill the criteria for classification*
✔ *– Data required to make classification available*
⊘ *– Data Not Available to make classification*

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
glass fibres loose - special purpose	EC50	48	Crustacea	0.476mg/L	2
glass fibres loose - special purpose	EC50	48	Algae or other aquatic plants	0.0217mg/L	2
glass fibres loose - special purpose	NOEC	48	Crustacea	0.0032mg/L	2
frits chemicals, lead containing	LC50	96	Fish	0.0079mg/L	2
frits chemicals, lead containing	EC50	48	Crustacea	0.1455mg/L	2
frits chemicals, lead containing	EC50	72	Algae or other aquatic plants	0.018mg/L	2
frits chemicals, lead containing	EC50	2400	Fish	0.0081mg/L	2
frits chemicals, lead containing	NOEC	504	Crustacea	0.00016mg/L	2
triethylene glycol dimethacrylate	LC50	96	Fish	66.369mg/L	3
silica amorphous, fumed	NOEC	24	Crustacea	>=10000mg/L	1

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silica amorphous	LC50	96	Fish	120.743mg/L	3
silica amorphous	EC50	48	Crustacea	ca.7600mg/L	1
silica amorphous	EC50	72	Algae or other aquatic plants	440mg/L	1
silica amorphous	EC50	384	Crustacea	28.000mg/L	3
silica amorphous	NOEC	72	Algae or other aquatic plants	60mg/L	1
Legend:	*Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*				

DO NOT discharge into sewer or waterways.
Prevent, by any means available, spillage from entering drains or water courses.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethylene glycol dimethacrylate	LOW	LOW
silica amorphous	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
triethylene glycol dimethacrylate	LOW (LogKOW = 1.88)
silica amorphous	LOW (LogKOW = 0.5294)

Mobility in soil

Ingredient	Mobility
triethylene glycol dimethacrylate	LOW (KOC = 10)
silica amorphous	LOW (KOC = 23.74)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Otherwise: ▸ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▸ Where possible retain label warnings and SDS and observe all notices pertaining to the product. Consult State Land Waste Management Authority for disposal.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	
HAZCHEM	Not Applicable

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

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

GLASS FIBRES LOOSE - SPECIAL PURPOSE(65997-17-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

FRITS CHEMICALS, LEAD CONTAINING(65997-18-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists | Australia Inventory of Chemical Substances (AICS)

Continued...

TRIETHYLENE GLYCOL DIMETHACRYLATE(109-16-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

SILICA AMORPHOUS, FUMED(68611-44-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)

SILICA AMORPHOUS(7631-86-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards
Australia Hazardous Substances Information System - Consolidated Lists
Australia Inventory of Chemical Substances (AICS)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (silica amorphous, fumed; triethylene glycol dimethacrylate; glass fibres loose - special purpose; frits chemicals, lead containing)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (silica amorphous, fumed; glass fibres loose - special purpose; frits chemicals, lead containing)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y
Legend:	*Y = All ingredients are on the inventory* *N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)*

SECTION 16 OTHER INFORMATION

Other information

Ingredients with multiple cas numbers

Name	CAS No
silica amorphous, fumed	68611-44-9, 112945-52-5, 60842-32-2
silica amorphous	7631-86-9, 112945-52-5, 67762-90-7, 68611-44-9, 68909-20-6, 112926-00-8, 61790-53-2, 60676-86-0, 91053-39-3, 69012-64-2, 844491-94-7

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

The 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.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index