
Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DENTSPLY ESTHETX FLOW LIQUID MICRO HYBRID RESTORATIVE

PRODUCT USE

For dental use only

SUPPLIER

Company: DENTSPLY (AUSTRALIA) PTY LTD

Address:

11- 21 Gilby Road

Mount Waverley

VIC 3149

AUSTRALIA

Telephone: 1300 55 29 29

Emergency Tel: 1300 55 29 29 (Hours of operation:

Monday - Friday 9:00 am - 5:00 pm EST; General

information only)

Fax: +61 3 9538 8260

Section 2 - HAZARDS IDENTIFICATION

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

None

RISK

- Irritating to eyes respiratory system and skin.
- May cause SENSITISATION by skin contact.

SAFETY

- Avoid contact with skin.
- Wear eye/face protection.
- Use only in well ventilated areas.
- Keep container in a well ventilated place.
- To clean the floor and all objects contaminated by this material use water and detergent.
- In case of contact with eyes rinse with plenty of water and contact Doctor or Poisons Information Centre.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
frits chemical	65997-18-4	>60
2, 2- bis[4- (2- methacryloxy)ethoxy]phenyl]propane	24448-20-2	<15
bisphenol A glycidylmethacrylate	1565-94-2	<15
triethylene glycol dimethacrylate	109-16-0	<10
urethane modified Bis- GMA dimethacrylate		<10
silica, dimethylsiloxane treated	67762-90-7	<5
titanium dioxide	13463-67-7	<2

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.

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Section 4 - FIRST AID MEASURES

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

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

FIRE FIGHTING

- - Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.

FIRE/EXPLOSION HAZARD

- - Non combustible.
 - Not considered a significant fire risk, however containers may burn.
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), hydrogen fluoride, silicon dioxide (SiO₂), metal oxides, 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. as ignition may result.

HAZCHEM: None

Personal Protective Equipment

Gas tight chemical resistant suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- - Clean up all spills immediately.
- Avoid contact with skin and eyes.

MAJOR SPILLS

- - 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

- - Most acrylic monomers have low viscosity therefore pouring, material transfer and processing of these materials do not necessitate heating.
- Viscous monomers may require heating to facilitate handling. To facilitate product transfer from original containers, product must be heated to no more than 60 deg. C. (140 F.), for not more than 24 hours.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

SUITABLE CONTAINER

- - Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.

STORAGE INCOMPATIBILITY

- - Avoid strong acids, acid chlorides and acid anhydrides..
- For frits:
- Avoid storage with hydrogen fluoride/ hydrofluoric acid, oxygen difluoride, manganese trifluoride, fluorine and other fluorine containing compounds, manganese trioxide, chlorates, chlorine trifluoride, chlorine trioxide, strong alkalis, metal oxides, concentrated orthophosphoric acid or vinyl acetate.
- for multifunctional acrylates:
- Avoid exposure to free radical initiators (peroxides, persulfates) , iron, rust, oxidisers, and strong acids and strong bases.

continued...

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Section 7 - HANDLING AND STORAGE

- Avoid heat, flame, sunlight, X-rays or ultra-violet radiation.

STORAGE REQUIREMENTS

- - Store in original containers.
 - Keep containers securely sealed.
- DO NOT store above 50 deg. C.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m ³	Notes
Australia Exposure Standards	titanium dioxide (Titanium dioxide (a))	10	(see Chapter 14)

The following materials had no OELs on our records

- frits chemical: CAS:65997- 18- 4
- 2, 2- bis[4- (2- methacryloxy)ethoxy]phenyl]propane: CAS:24448- 20- 2
- bisphenol A glycidylmethacrylate: CAS:1565- 94- 2
- triethylene glycol dimethacrylate: CAS:109- 16- 0
- silica, dimethylsiloxane treated: CAS:67762- 90- 7

PERSONAL PROTECTION

RESPIRATOR

Type A-P Filter of sufficient capacity

EYE

- - Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

- 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, eg. PVC.

OTHER

- - Overalls.
- P.V.C. apron.
- None under normal operating conditions.

ENGINEERING CONTROLS

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

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Various shades of viscous paste with a sweet acrylic ester odour; does not mix with water

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Sinks in water.

Molecular Weight: Not Applicable
Specific Gravity (water=1): 1.8

pH (1% solution): Not Applicable
Evaporation Rate: Not Applicable
Lower Explosive Limit (%): Not Applicable
Decomposition Temp (°C): Not Available

Boiling Range (°C): Not Applicable

Solubility in water (g/L): Immiscible
Vapour Pressure (kPa): Not Applicable
Relative Vapour Density (air=1): Not Applicable
Upper Explosive Limit (%): Not Applicable
State: Non Slump Paste

Melting Range (°C): Not Available
pH (as supplied): Not Applicable
Volatile Component (%vol): Not Available
Flash Point (°C): Not Applicable
Autoignition Temp (°C): Not Applicable
Viscosity: Not Available

continued...

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- - Presence of incompatible materials.
- Product is considered stable.
- Presence of heat source and direct sunlight.
- Presence of elevated temperatures.

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

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

- Irritating to eyes, respiratory system and skin.

CHRONIC HEALTH EFFECTS

- May cause SENSITISATION by skin contact.

TOXICITY AND IRRITATION

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

■ 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.

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.

UV/EB acrylates are divided into two groups; "stenomeric" and "eurymeric" acrylates. The first group consists of well-defined acrylates which can be described by a simple idealised chemical; they are low molecular weight species with a very narrow weight distribution profile.

Where no "official" classification for acrylates and methacrylates exists, there has been cautious attempts to create classifications in the absence of contrary evidence. For example

Monoalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53

Monoalkyl or monoaryl estere of methacrylic acid should be classified as R36/37/38.

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.

BISPHENOL A GLYCIDYLMETHACRYLATE:

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

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

UV/EB acrylates are divided into two groups; "stenomeric" and "eurymeric" acrylates. The first group consists of well-defined acrylates which can be described by a simple idealised chemical; they are low molecular weight species with a very narrow weight distribution profile.

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Monoalkyl or monoaryl estere of methacrylic acid should be classified as R36/37/38.

TRIETHYLENE GLYCOL DIMETHACRYLATE:

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

TOXICITY

Oral (rat) LD50: 10837 mg/kg

Oral (mouse) LD50: 10750 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.

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.

SILICA, DIMETHYLSILOXANE TREATED:

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

TOXICITY

Oral (rat) LD50: >5000 mg/kg

IRRITATION

Nil Reported

IRRITATION

Skin: 0/8 non-irritating

Eyes: 0.7/110 24hr Draize

non-irritating
[Cabot]

- 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.

TITANIUM DIOXIDE:

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

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Section 11 - TOXICOLOGICAL INFORMATION

TOXICITY

Oral (Rat) LD50: >20000 mg/kg *

Oral (Mouse) LD50: >10000 mg/kg *

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

For titanium dioxide:

Humans can be exposed to titanium dioxide via inhalation, ingestion or dermal contact. In human lungs, the clearance kinetics of titanium dioxide is poorly characterized relative to that in experimental animals.

* IUCLID

IRRITATION

Skin (human): 0.3 mg /3D (int)- Mild *

CARCINOGEN

Titanium dioxide

International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs

Group

2B

SENSITISER

triethylene glycol dimethacrylate

Australia Final Report on Hazard Classification of Common Skin Sensitisers

Recommended for Hazard Classification (R43)

No

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

Ingredient

Dentsply EsthetX Flow Liquid Micro Hybrid Restorative frits chemical
2, 2- bis[4- (2-methacryloxy)ethoxy]phenyl]propane bisphenol A glycidylmethacrylate
triethylene glycol dimethacrylate
silica, dimethylsiloxane treated
titanium dioxide

Persistence:
Water/Soil

Persistence:
Air

Bioaccumulat
ion

Mobility

No data

No data

No data

No data

LOW

No data

LOW

HIGH

No data

HIGH

No data

LOW

HIGH

Section 13 - DISPOSAL CONSIDERATIONS

■ - Containers may still present a chemical hazard/ danger when empty.

- Return to supplier for reuse/ recycling if possible.

Consult State Land Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: None

REGULATIONS

Regulations for ingredients

frits chemical (CAS: 65997-18-4) is found on the following regulatory lists;

"Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals"

2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane (CAS: 24448-20-2) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)"

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Section 15 - REGULATORY INFORMATION

bisphenol A glycidylmethacrylate (CAS: 1565-94-2) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)"

triethylene glycol dimethacrylate (CAS: 109-16-0) is found on the following regulatory lists;

"Australia Final Report on Hazard Classification of Common Skin Sensitisers", "Australia Inventory of Chemical Substances (AICS)", "International Council of Chemical Associations (ICCA) - High Production Volume List", "OECD Representative List of High Production Volume (HPV) Chemicals"

silica, dimethylsiloxane treated (CAS: 67762-90-7) is found on the following regulatory lists;

"Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals"

titanium dioxide (CAS: 13463-67-7,1317-70-0,1317-80-2,12188-41-9,1309-63-3,100292-32-8,101239-53-6,116788-85-3,12000-59-8,12701-76-7,12767-65-6,12789-63-8,1344-29-2,185323-71-1,185828-91-5,188357-76-8,188357-79-1,195740-11-5,221548-98-7,224963-00-2,246178-32-5,252962-41-7,37230-92-5,37230-94-7,37230-95-8,37230-96-9,39320-58-6,39360-64-0,39379-02-7,416845-43-7,494848-07-6,494848-23-6,494851-77-3,494851-98-8,55068-84-3,55068-85-4,552316-51-5,62338-64-1,767341-00-4,97929-50-5,98084-96-9) is found on the following regulatory lists;

"Australia Exposure Standards", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "Australia Therapeutic Goods Administration (TGA) Substances that may be used as active ingredients in Listed medicines", "Australia Therapeutic Goods Administration (TGA) Sunscreening agents permitted as active ingredients in listed products", "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 IBC Code Chapter 17: Summary of minimum requirements", "International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC Monographs", "OECD Representative List of High Production Volume (HPV) Chemicals"

No data for Dentsply EsthetX Flow Liquid Micro Hybrid Restorative (CW: 4993-57)

Section 16 - OTHER INFORMATION

Denmark Advisory list for selfclassification of dangerous substances

Substance	CAS	Suggested codes
2, 2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane	24448-20-2	N; R50/53
bisphenol A glycidylmethacrylate	1565-94-2	N; R50/53
triethylene glycol dimethacrylate	109-16-0	R43 N; R51/53

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
titanium dioxide	13463-67-7, 1317-70-0, 1317-80-2, 12188-41-9, 1309-63-3, 100292-32-8, 101239-53-6, 116788-85-3, 12000-59-8, 12701-76-7, 12767-65-6, 12789-63-8, 1344-29-2, 185323-71-1, 185828-91-5, 188357-76-8, 188357-79-1, 195740-11-5, 221548-98-7, 224963-00-2, 246178-32-5, 252962-41-7, 37230-92-5, 37230-94-7, 37230-95-8, 37230-96-9, 39320-58-6, 39360-64-0, 39379-02-7, 416845-43-7, 494848-07-6, 494848-23-6, 494851-77-3, 494851-98-8, 55068-84-3, 55068-85-4, 552316-51-5, 62338-64-1, 767341-00-4, 97929-50-5, 98084-96-9

■ 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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This is the end of the MSDS.