SAFETY DATA SHEETS

This SDS packet was issued with item:

070610261

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

070610287 070610295

SoloCem

Coltène/Whaledent AG

Version No: **4.4**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **30/06/2023**
Print Date: **22/10/2024**
L.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	SoloCem
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	Environmentally hazardous substance, solid, n.o.s. (contains zinc oxide)
Chemical formula	Not Applicable
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Medical device, for dental use only

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**Coltène/Whaledent AG**
Address	Feldwiesenstrasse 20 Altstätten 9450 Switzerland
Telephone	+41 (71) 75 75 300
Fax	+41 (71) 75 75 301
Website	www.coltene.com
Email	msds@coltene.com

Emergency phone number

Association / Organisation	**CHEMWATCH EMERGENCY RESPONSE (24/7)**
Emergency telephone number(s)	+1 855-237-5573
Other emergency telephone number(s)	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

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SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Acute Hazard Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2

Label elements

Page 1 continued...

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H402	Harmful to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P271	Use in a well-ventilated area.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

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

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
109-16-0	5-10	triethylene glycol dimethacrylate
72869-86-4	5-10	diurethane dimethacrylate
41637-38-1	5-10	bisphenol A dimethacrylate, ethoxylated
868-77-9	1-5	2-hydroxyethyl methacrylate

Continued...

CAS No	%[weight]	Name
1314-13-2	<2	zinc oxide
13760-80-0	15-25	ytterbium(III) fluoride
128-37-0	0.1	2,6-di-tert-butyl-4-methylphenol
85590-00-7	1-5	10-methacryloyloxydecyl dihydrogen phosphate
94-36-0	<1	dibenzoyl peroxide
70293-55-9	5-10	4-methacryloxyethyl trimellitic anhydride
131-57-7	0.1	oxybenzone

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

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.

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

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ 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. ▸ Fight fire from a safe distance, with adequate cover. ▸ If safe, switch off electrical equipment until vapour fire hazard removed. ▸ Use water delivered as a fine spray to control the 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.

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Fire/Explosion Hazard	Brännbar. Kommer att brinna om den antänds. Combustion products include: , carbon monoxide (CO) , carbon dioxide (CO2) , hydrogen fluoride , metal oxides , other pyrolysis products typical of burning organic material.

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	Environmental hazard - contain spillage. ▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Wear impervious gloves and safety goggles. ▸ Trowel up/scrape up. ▸ Place spilled material in clean, dry, sealed container. ▸ Flush spill area with water.
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. ▸ Stop leak if safe to do so. ▸ Contain spill with sand, earth or vermiculite. ▸ Collect recoverable product into labelled containers for recycling. ▸ Neutralise/decontaminate residue (see Section 13 for specific agent). ▸ Collect solid residues and seal in labelled drums for disposal. ▸ Wash area and prevent runoff into drains. ▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using. ▸ If contamination of drains or waterways occurs, advise emergency services. Environmental hazard - contain spillage.

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

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps. ▸ 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. Launder contaminated clothing before re-use. ▸ Use good occupational work practice. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS. ▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
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. ▸ Protect containers against physical damage and check regularly for leaks. ▸ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

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Suitable container	Recommended storage temperature: 4 - 8 °C ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Substances sensitive to light. for multifunctional acrylates: ▸ Avoid exposure to free radical initiators (peroxides, persulfates) , iron, rust, oxidisers, and strong acids and strong bases. ▸ Avoid heat, flame, sunlight, X-rays or ultra-violet radiation. ▸ Storage beyond expiration date, may initiate polymerisation. Polymerisation of large quantities may be violent (even explosive)

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	zinc oxide	Zinc oxide- Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	zinc oxide	Zinc oxide- Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	zinc oxide	Zinc oxide fume	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	zinc oxide	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	zinc oxide	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	zinc oxide	Zinc oxide - Dust	5 mg/m3	Not Available	15 mg/m3	Not Available
US NIOSH Recommended Exposure Limits (RELs)	zinc oxide	Zinc oxide - Fume	5 mg/m3	10 mg/m3	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	ytterbium(III) fluoride	Fluorides (as F)	2.5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-2	ytterbium(III) fluoride	Fluoride as dust	2.5 mg/m3	Not Available	Not Available	(Z37.28-1969)
US OSHA Permissible Exposure Limits (PELs) Table Z-1	2,6-di-tert-butyl-4-methylphenol	Particulates Not Otherwise Regulated (PNOR)- Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	2,6-di-tert-butyl-4-methylphenol	Particulates Not Otherwise Regulated (PNOR)- Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	2,6-di-tert-butyl-4-methylphenol	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	2,6-di-tert-butyl-4-methylphenol	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	2,6-di-tert-butyl-4-methylphenol	2,6-Di-tert-butyl-p-cresol	10 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	dibenzoyl peroxide	Benzoyl peroxide	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	dibenzoyl peroxide	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	dibenzoyl peroxide	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	dibenzoyl peroxide	Benzoyl peroxide	5 mg/m3	Not Available	Not Available	Not Available

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Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
triethylene glycol dimethacrylate	33 mg/m3	360 mg/m3	2,100 mg/m3
diurethane dimethacrylate	120 mg/m3	1,300 mg/m3	7,900 mg/m3
2-hydroxyethyl methacrylate	1.9 mg/m3	21 mg/m3	1,000 mg/m3
zinc oxide	10 mg/m3	15 mg/m3	2,500 mg/m3
ytterbium(III) fluoride	30 mg/m3	330 mg/m3	2,000 mg/m3
dibenzoyl peroxide	15 mg/m3	1,200 mg/m3	7,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
triethylene glycol dimethacrylate	Not Available	Not Available
diurethane dimethacrylate	Not Available	Not Available
bisphenol A dimethacrylate, ethoxylated	Not Available	Not Available
2-hydroxyethyl methacrylate	Not Available	Not Available
zinc oxide	500 mg/m3	Not Available
ytterbium(III) fluoride	Not Available	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available	Not Available
10-methacryloyloxydecyl dihydrogen phosphate	Not Available	Not Available
dibenzoyl peroxide	1,500 mg/m3	Not Available
4-methacryloxyethyl trimellitic anhydride	Not Available	Not Available
oxybenzone	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
triethylene glycol dimethacrylate	E	≤ 0.1 ppm
diurethane dimethacrylate	E	≤ 0.1 ppm
bisphenol A dimethacrylate, ethoxylated	E	≤ 0.1 ppm
2-hydroxyethyl methacrylate	E	≤ 0.1 ppm
10-methacryloyloxydecyl dihydrogen phosphate	E	≤ 0.1 ppm
4-methacryloxyethyl trimellitic anhydride	E	≤ 0.01 mg/m³
Notes:	***Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.***	

MATERIAL DATA

IFRA Prohibited Fragrance Substance
The International Fragrance Association (IFRA) Standards form the basis for the globally accepted and recognized risk management system for the safe use of fragrance ingredients and are part of the IFRA Code of Practice. This is the self-regulating system of the industry, based on risk assessments carried out by an independent Expert Panel
for zinc oxide:
Zinc oxide intoxication (intoxication zincale) is characterised by general depression, shivering, headache, thirst, colic and diarrhoea.
Exposure to the fume may produce metal fume fever characterised by chills, muscular pain, nausea and vomiting. Short-term studies with guinea pigs show pulmonary function changes and morphologic evidence of small airway inflammation. A no-observed-adverse-effect level (NOAEL) in guinea pigs was 2.7 mg/m3 zinc oxide. Based on present data, the current TLV-TWA may be inadequate to protect exposed workers although known physiological differences in the guinea pig make it more susceptible to functional impairment of the airways than humans.
Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen
[***National Toxicology Program: U.S. Dep. of Health & Human Services 2002***]
CEL TWA: 1 mg/m3 [compare WEEL-TWA* for multifunctional acrylates (MFAs)]
(CEL = Chemwatch Exposure Limit)
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).
These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

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CR = Cancer Risk/10000; UF = Uncertainty factor:
TLV believed to be adequate to protect reproductive health:
LOD: Limit of detection
Toxic endpoints have also been identified as:
D = Developmental; R = Reproductive; TC = Transplacental carcinogen
Jankovic J., Drake F.: A Screening Method for Occupational Reproductive
American Industrial Hygiene Association Journal 57: 641-649 (1996)

Exposed individuals are **NOT** reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

as ytterbium
CEL TWA: 1 mg/m3 (compare TLV-TWA yttrium)
(CEL = Chemwatch Exposure Limit)
Exposure to the vapours of some rare earth salts reportedly produces sensitivity to heat, itching and an increased perception of odour and taste. Other effects may include bronchiolitis, subacute bronchitis, acute transient chemical pneumonitis, focal hypertrophic emphysema, regional bronchiolar stricturing and cellular eosinophilia.
In rare fatal cases of exposure to the rare-earth fluoride and/or oxide mixtures, delayed chemical hyperaemia has occurred. Lung granulomas have also been seen in experimental animals.
2,6-di-tert-butyl-4-methylphenol (syn: butylated hydroxytoluene - BHT)
Because high dose levels are required to produce toxic effects and because there is little evidence of either acute or chronic effects amongst workers the recommended TLV-TWA is identical to that proposed for nuisance particulates.

For benzoyl peroxide:
The recommendation for the TLV-TWA is based on the absence of subjective symptoms of irritation of the nose and throat in humans exposed to 5.25 mg/m3. Whether this is sufficiently low to prevent cumulative effects in man is not known.

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range

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	1: Room air currents minimal or favourable to capture / 1: Disturbing room air currents 2: Contaminants of low toxicity or of nuisance value only. / 2: Contaminants of high toxicity 3: Intermittent, low production. / 3: High production, heavy use 4: Large hood or large air mass in motion / 4: Small hood-local control only Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Safety glasses with side shields. ‣ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ‣ 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. 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].
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.
Body protection	See Other protection below
Other protection	‣ Overalls. ‣ P.V.C apron. ‣ Barrier cream. ‣ Skin cleansing cream. ‣ Eye wash unit.

Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AK-AUS P2	-	AK-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AK-AUS / Class 1 P2	-
up to 100 x ES	-	AK-2 P2	AK-PAPR-2 P2 ^

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

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Not Available

Physical state	Free-flowing 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 Available	**Decomposition temperature (°C)**	Not Available

Continued...

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 Available	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available
Heat of Combustion (kJ/g)	Not Available	**Ignition Distance (cm)**	Not Available
Flame Height (cm)	Not Available	**Flame Duration (s)**	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	**Enclosed Space Ignition Deflagration Density (g/m3)**	Not Available

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

SoloCem	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
triethylene glycol dimethacrylate	**TOXICITY**	**IRRITATION**
	Oral (Mouse) LD50; 10750 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: 10837 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]
diurethane dimethacrylate	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg *[2]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: >2000 mg/kg *[2]	Skin: no adverse effect observed (not irritating)[1]
bisphenol A dimethacrylate, ethoxylated	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
2-hydroxyethyl methacrylate	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >3000 mg/kg[2]	Eye (rabbit): SEVERE *post-exposure
	Oral (Rat) LD50: >=2000 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
		Skin (rabbit): non-irritating* * Rohm & Haas
		Skin: no adverse effect observed (not irritating)[1]
zinc oxide	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit) : 500 mg/24 h - mild

Continued...

	Inhalation(Rat) LC50: >1.79 mg/l4h[1]	Eye: no adverse effect observed (not irritating)[1]
	Oral (Rat) LD50: >5000 mg/kg[1]	Skin (rabbit) : 500 mg/24 h- mild
		Skin: no adverse effect observed (not irritating)[1]
ytterbium(III) fluoride	**TOXICITY**	**IRRITATION**
	Oral (Rat) LD50: >2000 mg/kg[1]	Skin: no adverse effect observed (not irritating)[1]
2,6-di-tert-butyl-4-methylphenol	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye (rabbit): 100 mg/24h-moderate
	Oral (Rat) LD50: 890 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
		Skin (human): 500 mg/48h - mild
		Skin (rabbit):500 mg/48h-moderate
		Skin: no adverse effect observed (not irritating)[1]
10-methacryloyloxydecyl dihydrogen phosphate	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
dibenzoyl peroxide	**TOXICITY**	**IRRITATION**
	dermal (mammal) LD50: >1000 mg/kg[2]	Eye (rabbit): 500 mg/24h - mild
	Oral (Rat) LD50: 7710 mg/kg[2]	Skin effects (MAK): very weak (@ 50%)
4-methacryloxyethyl trimellitic anhydride	**TOXICITY**	**IRRITATION**
	Oral (Rat) LD50: >2000 mg/kg[2]	Not Available
oxybenzone	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >16000 mg/kg *[2]	Not Available
	Oral (Rat) LD50: >12800 mg/kg *[2]	
	Oral (Rat) LD50: 7400 mg/kg[2]	

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***

SoloCem	The various members of the bisphenol family produce hormone like effects, seemingly as a result of binding to estrogen receptor-related receptors (ERRs; not to be confused with estrogen receptors) A suspected estrogen-related receptors (ERR) binding agent: Estrogen-related receptors (ERR, oestrogen-related receptors) are so named because of sequence homology with estrogen receptors but do not appear to bind estrogens or other tested steroid hormones. The ERR family have been demonstrated to control energy homeostasis, oxidative metabolism and mitochondrial biogenesis ,while effecting mammalian physiology in the heart, brown adipose tissue, white adipose tissue, placenta, macrophages, and demonstrated additional roles in diabetes and cancer. ERRs bind enhancers throughout the genome where they exert effects on gene regulation Although their overall functions remain uncertain, they also share DNA-binding sites, co-regulators, and target genes with the conventional estrogen receptors ERalpha and ERbeta and may function to modulate estrogen signaling pathways. · ERR-alpha has wide tissue distribution but it is most highly expressed in tissues that preferentially use fatty acids as energy sources such as kidney, heart, brown adipose tissue, cerebellum, intestine, and skeletal muscle. ERRalpha has been detected in normal adrenal cortex tissues, in which its expression is possibly related to adrenal development, with a possible role in fetal adrenal function, in dehydroepiandrosterone (DHEAS) production in adrenarche, and also in steroid production of post-adrenarche/adult life. DHEA and other adrenal androgens such as androstenedione, although relatively weak androgens, are responsible for the androgenic effects of adrenarche, such as early pubic and axillary hair growth, adult-type body odor, increased oiliness of hair and skin, and mild acne. · ERR-beta is a nuclear receptor . Its function is unknown; however, a similar protein in mouse plays an essential role in placental development · ERR-gamma is a nuclear receptor that behaves as a constitutive activator of transcription. There is evidence that bisphenol A functions as an endocrine disruptor by binding strongly to ERRgamma BPA as well as its nitrated and chlorinated metabolites seems to binds strongly to ERR-gamma (dissociation constant = 5.5 nM), but not to the estrogen receptor (ER). BPA binding to ERR-gamma preserves its basal constitutive activity.Different expression of ERR-gamma in different parts of the body may account for variations in bisphenol A effects. For instance, ERR-gamma has been found in high concentration in the placenta, explaining reports of high bisphenol A accumulation there
SoloCem & triethylene glycol dimethacrylate & diurethane dimethacrylate & BISPHENOL A 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. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are

Continued...

ETHOXYLATED & 2-HYDROXYETHYL METHACRYLATE & 2,6-DI-TERT-BUTYL-4-METHYLPHENOL & 10-METHACRYLOYLOXYDECYL DIHYDROGEN PHOSPHATE & DIBENZOYL PEROXIDE & 4-METHACRYLOXYETHYL TRIMELLITIC ANHYDRIDE & oxybenzone	equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.
ZINC OXIDE & DIBENZOYL PEROXIDE	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. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

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 either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

SECTION 12 Ecological information

Toxicity

SoloCem

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

triethylene glycol dimethacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	72.8mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	18.6mg/l	2
LC50	96h	Fish	16.4mg/l	2

diurethane dimethacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	>0.68mg/l	2
EC50	48h	Crustacea	>1.2mg/L	2
LC50	96h	Fish	10.1mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	0.21mg/l	2

bisphenol A dimethacrylate, ethoxylated

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	504h	Crustacea	>=0.022mg/L	2

2-hydroxyethyl methacrylate

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	345mg/l	2
EC50	48h	Crustacea	380mg/l	2
NOEC(ECx)	504h	Crustacea	24.1mg/l	2
LC50	96h	Fish	>100mg/l	2

zinc oxide

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1344h	Fish	19-110	7
EC50	72h	Algae or other aquatic plants	0.022mg/L	2
ErC50	72h	Algae or other aquatic plants	0.62mg/l	2
EC50	48h	Crustacea	0.105mg/L	2
LC50	96h	Fish	0.102mg/L	2
EC10(ECx)	168h	Algae or other aquatic plants	0.003mg/L	2
EC50	96h	Algae or other aquatic plants	0.042mg/L	2

ytterbium(III) fluoride

Endpoint	Test Duration (hr)	Species	Value	Source

Continued...

	EC50	48h	Crustacea	>0.52mg/l	2
	NOEC(ECx)	48h	Crustacea	0.52mg/l	2

2,6-di-tert-butyl-4-methylphenol

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1344h	Fish	220-2800	7
EC50	72h	Algae or other aquatic plants	>0.42mg/l	1
ErC50	72h	Algae or other aquatic plants	>0.42mg/l	1
EC50	48h	Crustacea	>0.17mg/l	2
EC0(ECx)	48h	Crustacea	>=0.31mg/l	1
LC50	96h	Fish	0.199mg/l	2
EC50	96h	Algae or other aquatic plants	0.758mg/l	2

10-methacryloyloxydecyl dihydrogen phosphate

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

dibenzoyl peroxide

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	0.042mg/l	2
EC50	48h	Crustacea	0.11mg/l	2
LC50	96h	Fish	0.06mg/l	2
EC10(ECx)	504h	Crustacea	0.001mg/l	2

4-methacryloxyethyl trimellitic anhydride

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

oxybenzone

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1680h	Fish	33-156	7
EC50	72h	Algae or other aquatic plants	<=0.042mg/L	4
EC50	48h	Crustacea	1.87mg/l	2
EC10(ECx)	72h	Algae or other aquatic plants	0.004mg/L	4
LC50	96h	Fish	3.196-4.588mg/L	4

Legend: ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethylene glycol dimethacrylate	LOW	LOW
2-hydroxyethyl methacrylate	LOW	LOW
2,6-di-tert-butyl-4-methylphenol	HIGH	HIGH
dibenzoyl peroxide	LOW (Half-life = 14 days)	LOW (Half-life = 21.25 days)
oxybenzone	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
triethylene glycol dimethacrylate	LOW (LogKOW = 1.88)
2-hydroxyethyl methacrylate	LOW (BCF = 1.54)
zinc oxide	LOW (BCF = 217)
2,6-di-tert-butyl-4-methylphenol	HIGH (BCF = 2500)
dibenzoyl peroxide	LOW (LogKOW = 3.46)
oxybenzone	LOW (BCF = 160)

Continued...

Mobility in soil

Ingredient	Mobility
triethylene glycol dimethacrylate	LOW (Log KOC = 10)
2-hydroxyethyl methacrylate	HIGH (Log KOC = 1.043)
2,6-di-tert-butyl-4-methylphenol	LOW (Log KOC = 23030)
dibenzoyl peroxide	LOW (Log KOC = 771)
oxybenzone	LOW (Log KOC = 1268)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Dispose of waste according to applicable legislation. Special country-specific regulations may apply. Can be disposed together with household waste in compliance with official regulations in contact with approved waste disposal companies and with authorities in charge. (Only dispose of completely emptied packages.)

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	

Shipping container, transport vehicle placarding, and labeling may vary from the below information. This depends on the quantity shipped, the applicability of excepted quantity requirements, limited quantity requirements, and/or special provisions according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT)

14.1. **UN number or ID number**	3077
14.2. **UN proper shipping name**	Environmentally hazardous substance, solid, n.o.s. (contains zinc oxide)
14.3. **Transport hazard class(es)**	Class: 9 Subsidiary Hazard: Not Applicable
14.4. **Packing group**	III
14.5. **Environmental hazard**	Environmentally hazardous
14.6. **Special precautions for user**	Hazard Label: 9 Special provisions: 8, 146, 335, 384, 441, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33

For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain LESS THAN the reportable quantity (5 kg or 5 L) - Not Regulated
For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain MORE THAN the reportable quantity (5 kg or 5 L) - Regulated and classified as below:

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	3077
14.2. **UN proper shipping name**	Environmentally hazardous substance, solid, n.o.s. (contains zinc oxide)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 9 ICAO / IATA Subsidiary Hazard: Not Applicable

Continued...

	ERG Code	9L
14.4. **Packing group**	III	
14.5. **Environmental hazard**	Environmentally hazardous	
14.6. **Special precautions for user**	Special provisions	A97 A158 A179 A197 A215
	Cargo Only Packing Instructions	956
	Cargo Only Maximum Qty / Pack	400 kg
	Passenger and Cargo Packing Instructions	956
	Passenger and Cargo Maximum Qty / Pack	400 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y956
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	3077	
14.2. **UN proper shipping name**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc oxide)	
14.3. **Transport hazard class(es)**	IMDG Class	9
	IMDG Subsidiary Hazard	Not Applicable
14.4. **Packing group**	III	
14.5 **Environmental hazard**	Marine Pollutant	
14.6. **Special precautions for user**	EMS Number	F-A , S-F
	Special provisions	274 335 966 967 969
	Limited Quantities	5 kg

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

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
triethylene glycol dimethacrylate	Not Available
diurethane dimethacrylate	Not Available
bisphenol A dimethacrylate, ethoxylated	Not Available
2-hydroxyethyl methacrylate	Not Available
zinc oxide	Not Available
ytterbium(III) fluoride	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available
10-methacryloyloxydecyl dihydrogen phosphate	Not Available
dibenzoyl peroxide	Not Available
4-methacryloxyethyl trimellitic anhydride	Not Available
oxybenzone	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
triethylene glycol dimethacrylate	Not Available
diurethane dimethacrylate	Not Available
bisphenol A dimethacrylate, ethoxylated	Not Available
2-hydroxyethyl methacrylate	Not Available
zinc oxide	Not Available

Continued...

Product name	Ship Type
ytterbium(III) fluoride	Not Available
2,6-di-tert-butyl-4-methylphenol	Not Available
10-methacryloyloxydecyl dihydrogen phosphate	Not Available
dibenzoyl peroxide	Not Available
4-methacryloxyethyl trimellitic anhydride	Not Available
oxybenzone	Not Available

SECTION 15 Regulatory information

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

triethylene glycol dimethacrylate is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

diurethane dimethacrylate is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

bisphenol A dimethacrylate, ethoxylated is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

2-hydroxyethyl methacrylate is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

zinc oxide is found on the following regulatory lists

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US CWA (Clean Water Act) - Priority Pollutants
US CWA (Clean Water Act) - Toxic Pollutants
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-1 (Spanish)
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US OSHA Permissible Exposure Limits (PELs) Table Z-3 (Spanish)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

ytterbium(III) fluoride is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
US DOE Temporary Emergency Exposure Limits (TEELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-1 (Spanish)
US OSHA Permissible Exposure Limits (PELs) Table Z-2
US OSHA Permissible Exposure Limits (PELs) Table Z-2 (Spanish)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

2,6-di-tert-butyl-4-methylphenol is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances

Continued...

US - Pennsylvania - Hazardous Substance List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-1 (Spanish)
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US OSHA Permissible Exposure Limits (PELs) Table Z-3 (Spanish)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

10-methacryloyloxydecyl dihydrogen phosphate is found on the following regulatory lists

Not Applicable

dibenzoyl peroxide is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Reactive Materials
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-1 (Spanish)
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US OSHA Permissible Exposure Limits (PELs) Table Z-3 (Spanish)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

4-methacryloxyethyl trimellitic anhydride is found on the following regulatory lists

US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements

oxybenzone is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No

Continued...

Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

CAS No	%[weight]	Name
1314-13-2	<2	zinc oxide
94-36-0	<1	dibenzoyl peroxide

This information must be included in all SDSs that are copied and distributed for this material.

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

⚠ **WARNING:** This product can expose you to chemicals including **titanium dioxide**, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

Additional State Regulatory Information

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (ytterbium(III) fluoride; 10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)
Canada - DSL	No (diurethane dimethacrylate; ytterbium(III) fluoride; 10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)
Canada - NDSL	No (triethylene glycol dimethacrylate; bisphenol A dimethacrylate, ethoxylated; 2-hydroxyethyl methacrylate; 10-methacryloyloxydecyl dihydrogen phosphate; dibenzoyl peroxide; 4-methacryloxyethyl trimellitic anhydride; oxybenzone)
China - IECSC	No (10-methacryloyloxydecyl dihydrogen phosphate)
Europe - EINEC / ELINCS / NLP	No (bisphenol A dimethacrylate, ethoxylated; 10-methacryloyloxydecyl dihydrogen phosphate)
Japan - ENCS	No (diurethane dimethacrylate; 10-methacryloyloxydecyl dihydrogen phosphate)
Korea - KECI	No (10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)
New Zealand - NZIoC	No (10-methacryloyloxydecyl dihydrogen phosphate)
Philippines - PICCS	No (diurethane dimethacrylate; bisphenol A dimethacrylate, ethoxylated; ytterbium(III) fluoride; 10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)
USA - TSCA	TSCA Inventory 'Active' substance(s) (triethylene glycol dimethacrylate; diurethane dimethacrylate; bisphenol A dimethacrylate, ethoxylated; 2-hydroxyethyl methacrylate; zinc oxide; ytterbium(III) fluoride; 2,6-di-tert-butyl-4-methylphenol; dibenzoyl peroxide; oxybenzone); No (10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)
Taiwan - TCSI	No (10-methacryloyloxydecyl dihydrogen phosphate)
Mexico - INSQ	No (diurethane dimethacrylate; bisphenol A dimethacrylate, ethoxylated; ytterbium(III) fluoride; 10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)
Vietnam - NCI	No (ytterbium(III) fluoride; 4-methacryloxyethyl trimellitic anhydride)
Russia - FBEPH	No (diurethane dimethacrylate; bisphenol A dimethacrylate, ethoxylated; 10-methacryloyloxydecyl dihydrogen phosphate; 4-methacryloxyethyl trimellitic anhydride)

Continued...

National Inventory	Status
Legend:	***Yes = All CAS declared ingredients are on the inventory*** ***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.***

SECTION 16 Other information

Revision Date	30/06/2023
Initial Date	11/01/2022

SDS Version Summary

Version	Date of Update	Sections Updated
3.4	30/06/2023	Toxicological information - Acute Health (swallowed), Physical and chemical properties - Appearance, Toxicological information - Chronic Health, Hazards identification - Classification, Composition / information on ingredients - Ingredients

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

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
- ES: Exposure Standard
- 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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end of SDS