

Riva Light Cure HV Capsules

SDI Limited

Version No: 3.1.1.1 Safety Data Sheet (Conforms to Regulations (EC) No 2015/830) Issue Date: 29/01/2016 Print Date: 08/04/2016 Initial Date: Not Available L.REACH.IRL.EN

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

1.1.Product Identifier

Product name	Riva Light Cure HV Capsules		
Synonyms	Not Available		
Other means of identification	Not Available		

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

Relevant identified uses	Light-cured dental cement for dental restorations by dental professionals.
Uses advised against	Not Applicable

1.3. Details of the supplier of the safety data sheet

Registered company name	SDI Limited	SDI Brazil Industria E Comercio Ltda	SDI Germany GmbH			
Address	3-15 Brunsdon Street VIC Bayswater 3153 Australia	Rua Dr. Virgilio de Carvalho Pinto, 612 São Paulo CEP 05415-020 Brazil	Hansestrasse 85 Cologne D-51149 Germany			
Telephone	Telephone +61 3 8727 7111 (Business Hours) +55 11 3092 7100		+49 0 2203 9255 0			
Fax	+61 3 8727 7222	+55 11 3092 7101	+49 0 2203 9255 200			
Website	www.sdi.com.au	www.sdi.com.au	www.sdi.com.au			
Email	info@sdi.com.au	brasil@sdi.com.au	germany@sdi.com.au			
Registered company name	SDI (North America) Inc.					
Address	1279 Hamilton Parkway IL Itasca 60143 United States					
Telephone	+1 630 361 9200 (Business hours)					
Fax	Not Available					
Website	Not Available					
Email	USA.Canada@sdi.com.au					

1.4. Emergency telephone number

Association / Organisation	SDI Limited	Not Available	Not Available		
Emergency telephone numbers	+61 3 8727 7111	Not Available	Not Available		
Other emergency telephone numbers	ray.cahill@sdi.com.au	Not Available	Not Available		
Association / Organisation	Not Available				
Emergency telephone numbers	+61 3 8727 7111				
Other emergency telephone numbers	Not Available				

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Considered a dangerous mixture according to directive 1999/45/EC, Reg. (EC) No 1272/2008 (if applicable) and their amendments. Not classified as Dangerous Goods for transport purposes.

DSD classification	In case of mixtures, classification has been prepared by following DPD (Directive 1999/45/EC) and CLP Regulation (EC) No 1272/2008 regulations					
DPD classification ^[1]	R36/37/38 Irritating to eyes, respiratory system and skin. R43 May cause SENSITISATION by skin contact.					

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Legend:

Classification according to regulation (EC) No 1272/2008 [CLP] [1]

1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Skin Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation)

Legend:

1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

2.2. Label elements

CLP label elements



SIGNAL WORD V

WARNING

Hazard statement(s)

H315	Causes skin irritation.	
H319	uses serious eye irritation.	
H317	May cause an allergic skin reaction.	
H335	May cause respiratory irritation.	

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

P271	se only outdoors or in a well-ventilated area.			
P280	protective gloves/protective clothing/eye protection/face protection.			
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.			
P272	Contaminated work clothing should not be allowed out of the workplace.			

Precautionary statement(s) Response

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

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 in accordance with local regulations
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2.3. Other hazards

Ingestion may produce health damage*.

Cumulative effects may result following exposure*.

REACh - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to directive 67/548/EEC [DSD]	Classification according to regulation (EC) No 1272/2008 [CLP]
		compartment 1 contains		
1.9003-01-4 2.Not Available 3.Not Available 4.Not Available	15-25	acrylic acid homopolymer	R36/37/38, R51/53 ^[1]	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Chronic Aquatic Hazard Category 2; H315, H319, H335, H411 [1]

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1.868-77-9 2.212-782-2 3.607-124-00-X 4.01-2119490169-29-XXXX	15-25	2-hydroxyethyl methacrylate	R36/38, R43 ^[2]	Eye Irritation Category 2, Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1; H319, H315, H317 ^[3]
Not Available Not Available Not Available Not Available Not Available	10-25	dimethacrylate cross-linker	Not Applicable	Not Applicable
Not Available Not Available Not Available Not Available Not Available	10-20	acid monomer	Not Applicable	Not Applicable
1.87-69-4 2.201-766-0 3.Not Available 4.01-2119537204-47-XXXX, 01-2119851173-43-XXXX, 01-2119851174-41-XXXX	1-5	tartaric acid	R36/37/38 ^[1]	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation); H315, H319, H335 [1]
		compartment 2 contains		
Not Available Not Applicable Not Applicable Anot Applicable Anot Applicable	93-100	glass powder	Not Applicable	Not Applicable
Legend:	Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI A. Classification drawn from C&L			

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

4.1. Description of first aid	a measures
General	If skin contact occurs:
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 furnes or combustion products are inhaled remove from contaminated area. Seek medical attention.
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.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

5.1. Extinguishing media

Foam is generally ineffective.

5.2. Special hazards arising from the substrate or mixture

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Fire Incompatibility None known. 5.3. Advice for firefighters ▶ 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 courses. ▶ Use water delivered as a fine spray to control fire and cool adjacent area. Fire Fighting ▶ 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. ▶ Equipment should be thoroughly decontaminated after use Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. On combustion, may emit toxic fumes of carbon monoxide (CO). Fire/Explosion Hazard May emit acrid smoke. Mists containing combustible materials may be explosive. Combustion products include; carbon dioxide (CO2) nitrogen oxides (NOx) other pyrolysis products typical of burning organic materialMay emit poisonous fumes. May emit corrosive fumes.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. 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. 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.

6.4. Reference to other sections

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

SECTION 7 HANDLING AND STORAGE

7.1. 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. DO NOT enter confined spaces until atmosphere has been checked. DO NOT allow material to contact humans, exposed food or food utensils. 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.
Fire and explosion protection	See section 5
Other information	Store between 5 and 25 deg, C. Do not store in direct sunlight. Store in a dry and well ventilated-area, away from heat and sunlight.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container

- ▶ DO NOT repack. Use containers supplied by manufacturer only.
- ► Check that containers are clearly labelled and free from leaks

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Storage incompatibility

None known

7.3. Specific end use(s)

See section 1.2

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available
EMERGENCY LIMITS						

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
acrylic acid homopolymer	Acrylic acid polymers; (Acrylic polymer or resin)	7.5 mg/m3	83 mg/m3	500 mg/m3
2-hydroxyethyl methacrylate	Hydroxyethyl methacrylate, 2-	0.71 mg/m3	7.8 mg/m3	1000 mg/m3
tartaric acid	Tartaric acid	1.6 mg/m3	17 mg/m3	100 mg/m3

Ingredient	Original IDLH	Revised IDLH
acrylic acid homopolymer	Not Available	Not Available
2-hydroxyethyl methacrylate	Not Available	Not Available
dimethacrylate cross-linker	Not Available	Not Available
acid monomer	Not Available	Not Available
tartaric acid	Not Available	Not Available
glass powder	Not Available	Not Available

MATERIAL DATA

NOTE D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed on Annex I

When they are placed on the market in a non-stabilised form, the label must state the name of the substance followed by the words "non-stabilised"

European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

8.2. Exposure 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.

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

8.2.1. Appropriate engineering controls

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	
aerosols, furnes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid furnes, 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
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

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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. 8.2.2. Personal 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. This should include a review of lens absorption and adsorption for the class of Eye and face protection 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], [AS/NZS 1336 or national equivalent] Skin protection See Hand protection below ▶ Wear chemical protective gloves, e.g. PVC. Hands/feet protection Wear safety footwear or safety gumboots, e.g. Rubber Rubber Gloves **Body protection** See Other protection below Overalls. ▶ P.V.C. apron. Other protection Barrier cream. ► Skin cleansing cream. ► Eye wash unit. Thermal hazards Not Available

Respiratory protection

Type A 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	A-AUS P3	-	A-PAPR-AUS / Class 1 P3
up to 50 x ES	-	A-AUS / Class 1 P3	-
up to 100 x ES	-	A-2 P3	A-PAPR-2 P3 ^

^{^ -} 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)

8.2.3. Environmental exposure controls

See section 12

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

2.1. Information on Sustain and Shellingar properties			
Appearance	Smooth, pale-coloured paste with slightly characteristic odour.		
		5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Physical state	Non Slump Paste	Relative density (Water = 1)	Not Available
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	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 Applicable
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 (g/L)	Not Available	pH as a solution (1%)	Not Available

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 Vapour density (Air = 1)
 Not Available

 VOC g/L
 Not Available

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

10.1.Reactivity	See section 7.2	
10.2.Chemical stability	duct is considered stable and hazardous polymerisation will not occur.	
10.3. Possibility of hazardous reactions	See section 7.2	
10.4. Conditions to avoid	See section 7.2	
10.5. Incompatible materials	See section 7.2	
10.6. Hazardous decomposition products	See section 5.3	

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Inhaled	Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system devices from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination		
Ingestion	Accidental ingestion of the material may be damaging to the hea	alth of the individual.	
Skin Contact	Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.		
Еуе	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.		
Chronic	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Sensitisation may give severe responses to very low levels of exposure, in situations where exposure may occur.		
Riva Light Cure HV	TOXICITY	IRRITATION	
Capsules	Not Available	Not Available	
	TOXICITY	IRRITATION	
acrylic acid homopolymer	Oral (rat) LD50: 2500 mg/kgd ^[2]	Nil reported	
	TOXICITY	IRRITATION	
	Dermal (rabbit) LD50: >3000 mg/kg ^[1]	* Rohm & Haas	
2-hydroxyethyl methacrylate	Oral (rat) LD50: >4000 mg/kg ^[1]	Eye (rabbit): SEVERE *	
		post-exposure	
		Skin (rabbit): non-irritating*	
	TOXICITY	IRRITATION	
tartaric acid	dermal (rat) LD50: >2000 mg/kg ^[1]	Nil reported	
	Oral (rat) LD50: ca.920 mg/kg ^[1]		
	TOXICITY	IRRITATION	
glass powder	Not Available	Not Available	
Legend:	Value obtained from Europe ECHA Registered Substances - extracted from RTECS - Register of Toxic Effect of chemical Su	Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data ubstances	

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ACRYLIC ACID

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. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. 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.

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 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.

2-HYDROXYETHYL METHACRYLATE

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. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. 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

Monalkyl or monoarylesters of acrylic acids should be classified as R36/37/38 and R51/53

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

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.

Dermal (rabbit): >5000 mg/kg* Effects persist beyond 21 days

TARTARIC ACID

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. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. Convulsions, haemorrhage recorded.

Acute Toxicity	0	Carcinogenicity	0
Skin Irritation/Corrosion	✓	Reproductivity	0
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	0
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	0
Mutagenicity	0	Aspiration Hazard	0

Legend:

X - 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

12.1. Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
acrylic acid homopolymer	EC50	384	Crustacea	389.869mg/L	3
acrylic acid homopolymer	EC50	96	Algae or other aquatic plants	8596.446mg/L	3
acrylic acid homopolymer	LC50	96	Fish	1684.686mg/L	3
2-hydroxyethyl methacrylate	LC50	96	Fish	>100mg/L	2
2-hydroxyethyl methacrylate	EC50	48	Crustacea	210mg/L	2
2-hydroxyethyl methacrylate	EC50	504	Crustacea	90.1mg/L	2
2-hydroxyethyl methacrylate	NOEC	504	Crustacea	24.1mg/L	2
2-hydroxyethyl methacrylate	EC50	72	Algae or other aquatic plants	345mg/L	2
tartaric acid	EC50	96	Algae or other aquatic plants	434.65983mg/L	3
tartaric acid	LC50	96	Fish	>100mg/L	2
tartaric acid	EC50	48	Crustacea	93.313mg/L	2
tartaric acid	EC50	72	Algae or other aquatic plants	51.4043mg/L	2

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tartaric acid NOEC 72 3.125mg/L Algae or other aquatic plants 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 Legend:

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air	
acrylic acid homopolymer	LOW	LOW	
2-hydroxyethyl methacrylate	LOW	LOW	
tartaric acid	LOW	LOW	

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
acrylic acid homopolymer	LOW (LogKOW = 0.4415)
2-hydroxyethyl methacrylate	LOW (BCF = 1.54)
tartaric acid	LOW (LogKOW = -1.0017)

12.4. Mobility in soil

Ingredient	Mobility
acrylic acid homopolymer	HIGH (KOC = 1.201)
2-hydroxyethyl methacrylate	HIGH (KOC = 1.043)
tartaric acid	HIGH (KOC = 1)

12.5. Results of PBT and vPvB assessment

	P	В	Т
Relevant available data	Not Available	Not Available	Not Available
PBT Criteria fulfilled?	Not Available	Not Available	Not Available

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

	• DO NOT allow wash water from cleaning or process equipment to enter drains.		
	▶ It may be necessary to collect all wash water for treatment before disposal.		
Product / Packaging	▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.		
disposal	▶ Where in doubt contact the responsible authority.		
	Consult State Land Waste Management Authority for disposal.		
	Bury residue in an authorised landfill.		
Waste treatment options	Not Available		
Sewage disposal options	Not Available		

SECTION 14 TRANSPORT INFORMATION

class(es)

Subrisk

Labels Required

Marine Pollutant	NO
Land transport (ADR): NOT	REGULATED FOR TRANSPORT OF DANGEROUS GOODS
14.1.UN number	Not Applicable
14.2.Packing group	Not Applicable
14.3.UN proper shipping name	Not Applicable
14.4.Environmental hazard	Not Applicable
14.5. Transport hazard	Class Not Applicable

14.6. Special precautions for
user

Hazard identification (Kemler)	Not Applicable
Classification code	Not Applicable
Hazard Label	Not Applicable
Special provisions	Not Applicable

Not Applicable

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	Limited quantity Not Applicable			
Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS				
14.1. UN number	Not Applicable			
14.2. Packing group	Not Applicable			
14.3. UN proper shipping name	Not Applicable			
14.4. Environmental hazard	Not Applicable			
	ICAO/IATA Class Not Applicable			
14.5. Transport hazard class(es)	ICAO / IATA Subrisk Not Applicable			
ciass(es)	ERG Code Not Applicable			
	Special provisions	Not Applicable		
	Cargo Only Packing Instructions	Not Applicable		
440.0000101000000100001000	Cargo Only Maximum Qty / Pack	Not Applicable		
14.6. Special precautions for user	Passenger and Cargo Packing Instructions	Not Applicable		
	Passenger and Cargo Maximum Qty / Pack	Not Applicable		
	Passenger and Cargo Limited Quantity Packing Instructions	Not Applicable		
	Passenger and Cargo Limited Maximum Qty / Pack	Not Applicable		
Sea transport (IMDG-Code	/ GGVSee): NOT REGULATED FOR TRANSPORT O	F DANGEROUS GOODS		
14.1. UN number	Not Applicable			
14.2. Packing group	Not Applicable			
14.3. UN proper shipping name	Not Applicable			
14.4. Environmental hazard	Not Applicable			
14.5. Transport hazard	IMDG Class Not Applicable			
class(es)	IMDG Subrisk Not Applicable			
	EMS Number Not Applicable			
14.6. Special precautions for user	Special provisions Not Applicable			
	Limited Quantities Not Applicable			
Inland waterways transpor	t (ADN): NOT REGULATED FOR TRANSPORT OF D	ANGEROUS GOODS		
14.1. UN number	Not Applicable			
14.2. Packing group	Not Applicable			
14.3. UN proper shipping name	Not Applicable			
14.4. Environmental hazard	Not Applicable			
14.5. Transport hazard class(es)	Not Applicable Not Applicable			
	Classification code Not Applicable			
	Special provisions Not Applicable			
14.6. Special precautions for user	Limited quantity Not Applicable			
	Equipment required Not Applicable			

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

Fire cones number

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

Not Applicable

\parallel ACRYLIC ACID HOMOPOLYMER(9003-01-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

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

Monographs

European Customs Inventory of Chemical Substances ECICS (English)

2-HYDROXYETHYL METHACRYLATE(868-77-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

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EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

TARTARIC ACID(87-69-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

CAS number

European Customs Inventory of Chemical Substances ECICS (English) European List of Notified Chemical Substances (ELINCS)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

ECHA Dession

GLASS POWDER(NOT APPLICABLE) IS FOUND ON THE FOLLOWING REGULATORY LISTS

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable -: 67/548/EEC, 1999/45/EC, 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments as well as the following British legislation: - The Control of Substances Hazardous to Health Regulations (COSHH) 2002 - COSHH Essentials - The Management of Health and Safety at Work Regulations 1999

15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

Ingradiant

ingredient	CAS Hullibel	muex No		ECHA DOSSIEI	
acrylic acid homopolymer	9003-01-4	Not Available		Not Available	
Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)		Pictograms Signal Word Code(s)		Hazard Statement Code(s)
1	Not Classified		Wng, GHS08, Dgr, GHS05, GHS09, GHS02		H319, H335, H340, H350, H314, H332, H317, H290, H226, H302, H312
2	Not Classified, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Muta. 1B, Carc. 1A, Skin Corr. 1B, Aquatic Chronic 3, Skin Corr. 1A, Acute Tox. 4, Met. Corr. 1, Flam. Liq. 3, Aquatic Acute 1		Wng, GHS08, Dgr, GHS05, GHS09, GHS02		H319, H335, H340, H350, H314, H332, H317, H290, H226, H302, H312
2	Skin Corr. 1B, Eye Dam. 1		GHS05, Dgr		H314

 $Harmonisation \ \ Code\ 1 = The\ most\ prevalent\ classification.\ Harmonisation\ \ Code\ 2 = The\ most\ severe\ classification.$

Ingredient	CAS number	Index No	ECHA Dossier
2-hydroxyethyl methacrylate	868-77-9	607-124-00-X	01-2119490169-29-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Skin Irrit. 2, Skin Sens. 1, Eye Irrit. 2	GHS07, Wng	H315, H317, H319
2	Skin Sens. 1, Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1B, Aquatic Chronic 4, Not Classified	GHS07, Wng	H317, H319, H315

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

Ingredient	CAS number	Index No	ECHA Dossier
tartaric acid	87-69-4	Not Available	01-2119537204-47-XXXX, 01-2119851173-43-XXXX, 01-2119851174-41-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Acute Tox. 4, Skin Irrit. 2, Skin Sens. 1, Eye Irrit. 2, STOT SE 3	GHS07, Wng	H302, H315, H317, H319, H335
2	Eye Dam. 1, Skin Irrit. 2, Acute Tox. 4, Skin Sens. 1, Eye Irrit. 2, STOT SE 3, Not Classified, Aquatic Chronic 3, Eye Irrit. 2A	GHS05, Dgr, Wng, GHS06	H318, H315, H302, H317, H335

 $Harmonisation \ \ Code\ 1 = The\ most\ prevalent\ classification.\ Harmonisation\ \ Code\ 2 = The\ most\ severe\ classification.$

Ingredient	CAS number	Index No	ECHA Dossier
glass powder		Not Applicable	Not Applicable

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
Not Available	Not Available	Not Available	Not Available

 $Harmonisation \ \ Code\ 1 = The\ most\ prevalent\ classification.\ Harmonisation\ \ Code\ 2 = The\ most\ severe\ classification.$

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (acrylic acid homopolymer; tartaric acid; 2-hydroxyethyl methacrylate)
China - IECSC	Υ
Europe - EINEC / ELINCS / NLP	N (acrylic acid homopolymer)
Japan - ENCS	Υ

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Korea - KECI	Y
New Zealand - NZIoC	Υ
Philippines - PICCS	Y
USA - TSCA	Υ
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

Full text Risk and Hazard codes

H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.
R36/38	Irritating to eyes and skin.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Other information

DSD / DPD label elements



Relevant risk statements are found in section 2.1

Indication(s) of danger	Xi
SAFETY ADVICE	
S02	Keep out of reach of children.
S24	Avoid contact with skin.
S26	In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
S35	This material and its container must be disposed of in a safe way.
\$37	Wear suitable gloves.
S39	Wear eye/face protection.
\$40	To clean the floor and all objects contaminated by this material, use water and detergent.
S46	If swallowed, seek medical advice immediately and show this container or label.
S56	Dispose of this material and its container at hazardous or special waste collection point.
S64	If swallowed, rinse mouth with water (only if the person is conscious).

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by SDI Limited 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.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

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

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TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index

The information contained in the Safety Data Sheet is based on data considered to be accurate, however, no warranty is expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof.

Other information:

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Department issuing SDS: Research and Development

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