

# **Riva Bond LC liquid**

**SDI Limited** 

Version No: 4.1.1.1 Safety Data Sheet (Conforms to Regulation (EC) No 2015/830) Issue Date: 22/04/2016 Print Date: 27/04/2016 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 Bond LC liquid		
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	Professional dental use: Riva Bond LC liquid is to be used with the Riva Bond LC powder as a light-cured dental cement bond 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	+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	te www.sdi.com.au www.sdi.com.au		www.sdi.com.au	
Email	info@sdi.com.au	di.com.au brasil@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 Reg. (EC) No 1272/2008 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		
[1]	R36/37/38 Irritating to eyes, respiratory system and skin.		
DPD classification <sup>[1]</sup>	R43 May cause SENSITISATION by skin contact.		

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	R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.		
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		
Classification according to regulation (EC) No 1272/2008 [CLP] [1]	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Skin Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Chronic Aquatic Hazard Category 3		
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 WARNING

## Hazard statement(s)

H315	Causes skin irritation.		
H319	Causes serious eye irritation.		
H317	May cause an allergic skin reaction.		
H335	May cause respiratory irritation.		
H412	Harmful to aquatic life with long lasting effects.		

# Supplementary statement(s)

Not Applicable

# Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.		
P280	Wear protective gloves/protective clothing/eye protection/face protection.		
P261	Avoid breathing mist/vapours/spray.		
P273	Avoid release to the environment.		
P272	Contaminated work clothing should not be allowed out of the workplace.		

# Precautionary statement(s) Response

P302+P352	IF ON SKIN: Wash with plenty of water and soap.
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.
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

# 2.3. Other hazards

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

# 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]
1.9003-01-4 2.Not Available 3.Not Available 4.Not Available	15-25	acrylic acid homopolymer	R36/37/38, R51/53 <sup>[1]</sup>	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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1.87-69-4 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 <sup>[1]</sup>	Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation); H315, H319, H335 [1]
1.868-77-9 2.212-782-2 3.607-124-00-X 4.01-2119490169-29-XXXX	25-40	2-hydroxyethyl methacrylate	R36/38, R43 <sup>[2]</sup>	Eye Irritation Category 2, Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1; H319, H315, H317 <sup>[3]</sup>
1.Not Available     2.Not Available     3.Not Available     4.Not Available	5-15	dimethacrylate cross-linker	Not Applicable	Not Applicable
Not Available     Not Available     Not Available     Not Available     Not Available	10-20	acidic monomer	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	n measures
General	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.  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.  If times or combustion products are inhaled remove from contaminated area.  Seek medical attention.  Immediately give a glass of water.  First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.  Seek medical attention.
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	<ul> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Seek medical attention.</li> </ul>
Ingestion	<ul> <li>Immediately give a glass of water.</li> <li>First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> <li>Seek medical attention.</li> </ul>

## 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

Use dry chemical or foam.

## 5.2. Special hazards arising from the substrate or mixture

•	•
Fire Incompatibility	None known.
5.3. Advice for firefighters	
Fire Fighting	<ul> <li>Alert Fire Brigade and tell them location and nature of hazard.</li> <li>Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>Prevent, by any means available, spillage from entering drains or water courses.</li> <li>Use fire fighting procedures suitable for surrounding area.</li> <li>DO NOT approach containers suspected to be hot.</li> <li>Cool fire exposed containers with water spray from a protected location.</li> <li>If safe to do so, remove containers from path of fire.</li> <li>Equipment should be thoroughly decontaminated after use.</li> </ul>

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Fire/Explosion Hazard

- Non combustible
- Not considered a significant fire risk, however containers may burn.
- , Decomposes on heating and produces; carbon dioxide (CO2) nitrogen oxides (NOx) other pyrolysis products typical of burning organic materialMay emit clouds of acrid smokeMay 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	<ul> <li>Clean up all spills immediately.</li> <li>Avoid breathing vapours and contact with skin and eyes.</li> <li>Control personal contact with the substance, by using protective equipment.</li> <li>Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>Wipe up.</li> <li>Place in a suitable, labelled container for waste disposal.</li> </ul>
Major Spills	Moderate hazard.  Clear area of personnel and move upwind.  Alert Fire Brigade and tell them location and nature of hazard.  Wear breathing apparatus plus protective gloves.  Prevent, by any means available, spillage from entering drains or water course.  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.
- Avoid contact with moisture.
  - 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

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.

Store between 4 and 25 deg C.

#### 7.2. Conditions for safe storage, including any incompatibilities

Suitable container	▶ DO NOT repack. Use containers supplied by manufacturer only.	
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

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#### PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
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
tartaric acid	Tartaric acid	1.6 mg/m3	17 mg/m3	100 mg/m3
2-hydroxyethyl methacrylate	Hydroxyethyl methacrylate, 2-	0.71 mg/m3	7.8 mg/m3	1000 mg/m3

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

CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear

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).	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	
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.

# 8.2.2. Personal protection











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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 imigation 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. Wear safety footwear or safety gumboots, e.g. Rubber Hands/feet protection ▶ Rubber Gloves **Body protection** See Other protection below No special equipment needed when handling small quantities. OTHERWISE: Other protection Overalls. ▶ Barrier cream. ► Eyewash unit.

## Respiratory protection

Thermal hazards

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

Not Available

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 ^

<sup>^ -</sup> 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

Appearance	Slightly yellowish liquid with slight characteristic odour, mixes with water.						
Physical state	Liquid	Relative density (Water = 1)	1.2				
Odour	Odour Not Available Partition co		Not Available				
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available				
pH (as supplied)	1-2	Not Available					
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available				
Initial boiling point and boiling range (°C)	~100	Molecular weight (g/mol)	Not Applicable				
Flash point (°C)	Flash point (°C) Not Applicable Taste		Not Available				
Evaporation rate	Not Available	Explosive properties	Not Available				
Flammability	Not Applicable	Oxidising properties	Not Available				
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available				
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available				
Vapour pressure (kPa)	approx 2.3	Gas group	Not Available				
Solubility in water (g/L)	Miscible	pH as a solution (1%)	Not Available				
Vapour density (Air = 1)	<1	VOC g/L	Not Available				

# 9.2. Other information

Not Available

# **SECTION 10 STABILITY AND REACTIVITY**

10.1.Reactivity	See section 7.2

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▶ Stable under controlled storage conditions provided material contains adequate stabiliser / polymerisation inhibitor. Bulk storages may have special storage requirements 10.2.Chemical stability • WARNING: Gradual decomposition in strong, sealed containers may lead to a large pressure build-up and subsequent explosion. Rapid and violent polymerisation possible at temperatures above 32 deg c. 10.3. Possibility of See section 7.2 hazardous reactions 10.4. Conditions to avoid See section 7.2 10.5. Incompatible materials See section 7.2 10.6. Hazardous

## **SECTION 11 TOXICOLOGICAL INFORMATION**

See section 5.3

#### 11.1. Information on toxicological effects

decomposition products

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.  Inhalation hazard is increased at higher temperatures.						
Ingestion	Accidental ingestion of the material may be damaging to the health	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.						
	TOXICITY	IRRITATION					
Riva Bond LC liquid	Not Available	Not Available					
	TOXICITY	IRRITATION					
acrylic acid homopolymer	Oral (rat) LD50: 2500 mg/kgd <sup>[2]</sup>	Nil reported					
	TOXICITY	IRRITATION					
tartaric acid	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Nil reported					
	Oral (rat) LD50: ca.920 mg/kg <sup>[1]</sup>						
	TOXICITY	IRRITATION					
	Dermal (rabbit) LD50: >3000 mg/kg <sup>[1]</sup>	* Rohm & Haas					
2-hydroxyethyl methacrylate	Oral (rat) LD50: >4000 mg/kg <sup>[1]</sup>	Eye (rabbit): SEVERE *					
		post-exposure					
		Skin (rabbit): non-irritating*					
Legend:	Nalue obtained from Europe ECHA Registered Substances - Act     extracted from RTECS - Register of Toxic Effect of chemical Subst	ute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data					

#### **ACRYLIC ACID** HOMOPOLYMER

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.

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## 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,

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

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

Legend:

🗶 – Data available but does not fill the criteria for classification

Data required to make classification available

Not Available to make classification

# **SECTION 12 ECOLOGICAL INFORMATION**

# 12.1. Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
acrylic acid homopolymer	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
tartaric acid	EC50	96	Algae or other aquatic plants	434.65983mg/L	3
tartaric acid	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
tartaric acid NOEC		72	Algae or other aquatic plants	3.125mg/L	2
2-hydroxyethyl methacrylate	hydroxyethyl methacrylate LC50 96 Fish		Fish	>100mg/L	2
2-hydroxyethyl methacrylate	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

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 -Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) -Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Harmful to aquatic organisms.

May cause long-term adverse effects in the aquatic environment.

DO NOT discharge into sewer or waterways

# 12.2. Persistence and degradability

Persistence: Water/Soil Ingredient Persistence: Air Version No: 4.1.1.1 Page 9 of 12 Issue Date: 22/04/2016 Print Date: 27/04/2016

# Riva Bond LC liquid

acrylic acid homopolymer	LOW	LOW
tartaric acid	LOW	LOW
2-hydroxyethyl methacrylate	LOW	LOW

## 12.3. Bioaccumulative potential

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

# 12.4. Mobility in soil

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

# 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

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

# **SECTION 14 TRANSPORT INFORMATION**

Marine Pollutant NO

# **Labels Required**

Land transport (ADR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS								
14.1.UN number	Not Applicable							
14.2.Packing group	Not Applicable	Not Applicable						
14.3.UN proper shipping name	Not Applicable	Not Applicable						
14.4.Environmental hazard	Not Applicable							
14.5. Transport hazard class(es)	Class Not Applicable Subrisk Not Applicable							
14.6. Special precautions for user	Hazard identification (Kemler)  Classification code  Hazard Label  Special provisions  Limited quantity	Not Applicable  Not Applicable  Not Applicable  Not Applicable  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

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# Riva Bond LC liquid

	1			
	ICAO/IATA Class Not Applicable			
14.5. Transport hazard class(es)	ICAO / IATA Subrisk Not Applicable			
	ERG Code Not Applicable			
	Special provisions	Not Applicable		
	Cargo Only Packing Instructions	Not Applicable		
	Cargo Only Maximum Qty / Pack	Not Applicable		
14.6. Special precautions for user	Passenger and Cargo Packing Instructions	Not Applicable		
usei	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	Not Applicable		
14.4. Environmental hazard	Not Applicable			
	IMDG Class   Not Applicable			
14.5. Transport hazard class(es)				
14.6. Special precautions for	EMS Number Not Applicable Special provisions Not Applicable			
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			

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

Special provisions

Equipment required Fire cones number

Limited quantity

Not Applicable

14.6. Special precautions for

# **SECTION 15 REGULATORY INFORMATION**

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

Not Applicable

Not Applicable

Not Applicable

Not Applicable

#### 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 European Customs Inventory of Chemical Substances ECICS (English)

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

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

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

European Customs Inventory of Chemical Substances ECICS (English)

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

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

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

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of

Dangerous Substances - updated by ATP: 31

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

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and

Packaging of Substances and Mixtures - Annex VI

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, 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

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H312

H314

H317, H319, H315

GHS05, Dgr

GHS07, Wng

#### 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**

2

Ingredient	CAS number	Index No		ECHA Doss	ier
acrylic acid homopolymer	9003-01-4	Not Available		Not Available	)
Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)		Pictograms S Word Code(	•	Hazard Statement Code(s)
1	Not Classified		Wng, GHS08 GHS05, GHS		H319, H335, H340, H350, H314, H332, H317, H290, H226, H302, H312
2	Not Classified, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3 1B, Aquatic Chronic 3, Skin Corr. 1A, Acute Tox. 4		Wng, GHS08 GHS05, GHS		H319, H335, H340, H350, H314, H332, H317, H290, H226, H302,

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

Aquatic Acute 1

Skin Corr. 1B, Eye Dam. 1

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			
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

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

Classified

Skin Sens. 1, Eye Irrit. 2, Skin Irrit. 2, Skin Sens. 1B, Aquatic Chronic 4, Not

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
Korea - KECI	Y
New Zealand - NZIoC	Y
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.

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#### Riva Bond LC liquid

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.
S23	Do not breathe gas/fumes/vapour/spray.
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.
S37	Wear suitable gloves.
S39	Wear eye/face protection.
\$40	To clean the floor and all objects contaminated by this material, use water.
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

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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