

SAFETY DATA SHEETS

This SDS packet was issued with item:

071065051

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

071065507

Section 1. Identification

Product name	: Optibond XTR Primer
Other means of identification	: Not available.
Product type	: Liquid.
<u>Relevant identified uses of the substance or mixture and uses advised against</u>	
Product use	: Dental product: Bonding agent
Manufacturer	: Kerr Australia Pty Limited Unit 10, 112-118 Talavera Road North Ryde, NSW 2113 Australia Telephone no.: 1 800 643 603 Email general queries: kerraust.orders@sybrondental.com
Emergency telephone number (with hours of operation)	: 61 401 690 670 (24 hours)
e-mail address of person responsible for this SDS	: peter.green@sybrondental.com

Section 2. Hazards identification

HSNO Classification	: 3.1 - FLAMMABLE LIQUIDS - Category B 6.1 - ACUTE TOXICITY (oral) - Category E 6.3 - SKIN IRRITATION - Category B 6.4 - EYE IRRITATION - Category A (Irritant) 6.5 - SENSITIZATION - Category B (Skin) 6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY - Category C Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 29.3% Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 29.3%
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Health effects are based on the uncured material.

This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) Regulations 2001.

This material is classified as a dangerous good according to criteria in New Zealand Standard 5433:2007 Transport of Dangerous Goods on Land.

GHS label elements

Signal word	: Danger
Hazard statements	: Highly flammable liquid and vapour. May be harmful if swallowed. Causes mild skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause harm to breast-fed children.

Precautionary statements

Prevention	: Obtain special instructions before use. Wear protective gloves. Wear eye or face protection. Keep away from ignition sources such as heat/sparks/open flame. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Avoid breathing vapour. Avoid contact during pregnancy/while nursing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
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Section 2. Hazards identification

- Response** : IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Wash hands after handling. IF exposed or concerned: Call a POISON CENTER or doctor/physician if you feel unwell. Get medical advice/attention.
- Storage** : Store in a well-ventilated place. Keep cool.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Symbol** :



Other hazards which do not result in classification : Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.
- CAS number/other identifiers**
- CAS number** : Not applicable.
- EC number** : Mixture.
- Product code** : Not available.

Ingredient name	%	CAS number
acetone	>=25 - <35	67-64-1
2-hydroxyethyl methacrylate	>=10 - <20	868-77-9
ethanol	>=5 - <10	64-17-5
(1-methylethylidene)bis[4,1-phenyleneoxy(2-hydroxy-3,1-propanediyl)]	>=1 - <5	1565-94-2
bismethacrylate		
2,6-di-tert-butyl-p-cresol	>=0.1 - <0.25	128-37-0

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Inhalation** : No special measures required. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Get medical attention if adverse health effects persist or are severe.
- Skin contact** : No special measures required. In case of contact, immediately flush skin with plenty of water. Get medical attention if symptoms occur.
- Eye contact** : No special measures are required. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : May be harmful if swallowed. Irritating to mouth, throat and stomach.

Section 4. First-aid measures

- Skin contact** : Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Eye contact** : Causes serious eye irritation.

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Eyes** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Indication of immediate medical attention and special treatment needed, if necessary

- Specific treatments** : Not available.
- Notes to physician** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Protection of first-aiders** : In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Specific hazards arising from the chemical** : Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides
- Hazchem code** : 3YE
- Special precautions for fire-fighters** : In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions, protective equipment and emergency procedures** : Low release. For professional use only. Handling of product in very small amounts or in situations where release is highly unlikely
- Environmental precautions** : Low release. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

- Small spill** : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.
- Large spill** : Small Quantity. For professional use only. Absorb with an inert material and place in an appropriate waste disposal container.

Section 7. Handling and storage

- Precautions for safe handling** : No special measures are required for small quantities under normal and intended conditions of product use. For professional use only. Put on appropriate personal protective equipment (see Section 8). Handle with care and dispose of in a safe manner.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
acetone	NZ OSH (New Zealand, 2/2013). WES-TWA: 500 ppm 8 hours. WES-TWA: 1185 mg/m ³ 8 hours. WES-STEL: 2375 mg/m ³ 15 minutes. WES-STEL: 1000 ppm 15 minutes. NZ OSH (New Zealand, 2/2013). WES-TWA: 1000 ppm 8 hours. WES-TWA: 1880 mg/m ³ 8 hours. NZ OSH (New Zealand, 2/2013). WES-TWA: 10 mg/m ³ 8 hours.
ethanol	
2,6-di-tert-butyl-p-cresol	

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

- Appropriate engineering controls** : No special measures are required for small quantities under normal and intended conditions of product use.

- Environmental exposure controls** : No special measures are required for small quantities under normal and intended conditions of product use.

Individual protection measures

- Hygiene measures** : No special measures are required for small quantities under normal and intended conditions of product use.

- Respiratory protection** : No special measures are required for small quantities under normal and intended conditions of product use.

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Eye protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection** : No special measures are required for small quantities under normal and intended conditions of product use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Colour** : Pale yellow.
- Odour** : Fruity ester-like
- Odour threshold** : Not available.
- pH** : 2.2
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 13°C (55.4°F)
- Burning rate** : Not applicable.
- Burning time** : Not applicable.
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapour pressure** : Not available.
- Vapour density** : Not available.
- Relative density** : 1
- Solubility** : Partially soluble in the following materials: cold water and hot water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- SADT** : Not available.
- Viscosity** : Not available.

Aerosol product

- Type of aerosol** : Not applicable.
- Heat of combustion** : Not available.
- Ignition distance** : Not applicable.
- Enclosed space ignition - Time equivalent** : Not applicable.
- Enclosed space ignition - Deflagration density** : Not applicable.
- Flame height** : Not applicable.
- Flame duration** : Not applicable.

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Section 10. Stability and reactivity

- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Under normal conditions of storage and use, hazardous polymerisation will not occur.

Section 11. Toxicological information

Information on the likely routes of exposure

- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : May be harmful if swallowed. Irritating to mouth, throat and stomach.
- Skin contact** : Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Eye contact** : Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

- Inhalation** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
dryness
cracking
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
acetone	LC50 Inhalation Vapour	Rat	76 mg/l	4 hours
	LC50 Inhalation Vapour	Rat	30000 ppm	4 hours
	LD50 Dermal	Rabbit	>15800 mg/kg	-
	LD50 Oral	Rat	5800 mg/kg	-
2-hydroxyethyl methacrylate	LD50 Oral	Rat	4230 mg/kg	-
	LC50 Inhalation Vapour	Rat	124700 mg/m ³	4 hours
	LD50 Oral	Rat	7 g/kg	-
2,6-di-tert-butyl-p-cresol	LD50 Oral	Rat	890 mg/kg	-

- Conclusion/Summary** : Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

Irritation/Corrosion

Section 11. Toxicological information

Product/ingredient name	Result	Species	Score	Exposure	Observation
acetone	Eyes - Mild irritant	Rabbit	-	10 microliters	-
	Eyes - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
ethanol	Skin - Mild irritant	Rabbit	-	395 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	0.066666667 minutes 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	100 microliters	-
	Eyes - Severe irritant	Rabbit	-	500 milligrams	-
	Skin - Mild irritant	Rabbit	-	400 milligrams	-
2,6-di-tert-butyl-p-cresol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	48 hours 500 milligrams	-

Sensitisation

Not available.

Potential chronic health effects

- General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- Inhalation** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Eye contact** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : May cause harm to breast-fed children.
- Fertility effects** : No known significant effects or critical hazards.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Specific target organ toxicity

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
2,6-di-tert-butyl-p-cresol	Category B	Oral	Not determined

Aspiration hazard

Not available.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	4789.7 mg/kg

Section 12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic and terrestrial toxicity

Product/ingredient name	Result	Species	Exposure
acetone	Acute EC50 20.565 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 6000000 µg/l Fresh water	Crustaceans - Gammarus pulex	48 hours
	Acute LC50 10000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 100 mg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
2-hydroxyethyl methacrylate	Chronic NOEC 4.95 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.016 ml/L Fresh water	Crustaceans - Daphniidae	21 days
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Acute LC50 227000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
ethanol	Acute EC50 17.921 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 2000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 25500 µg/l Marine water	Crustaceans - Artemia franciscana - Larvae	48 hours
	Acute LC50 42000 µg/l Fresh water	Fish - Oncorhynchus mykiss	4 days
2,6-di-tert-butyl-p-cresol	Chronic NOEC 4.995 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.375 ul/L Fresh water	Fish - Gambusia holbrooki - Larvae	12 weeks
	Acute EC50 0.77 mg/l Fresh water	Daphnia	48 hours

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
acetone	OECD 301B Ready Biodegradability - CO2 Evolution Test	90.9 % - 28 days	-	-
2-hydroxyethyl methacrylate	301C Ready Biodegradability - Modified MITI Test (I)	92 to 100 % - 14 days	-	-
2,6-di-tert-butyl-p-cresol	301D Ready Biodegradability - Closed Bottle Test	<10 % - 20 days	-	-

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
acetone	-	-	Readily
2-hydroxyethyl methacrylate	-	-	Readily
ethanol	-	-	Readily
2,6-di-tert-butyl-p-cresol	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
acetone	-0.23	-	low
2-hydroxyethyl methacrylate	0.42	-	low
ethanol	-0.35	-	low
2,6-di-tert-butyl-p-cresol	5.1	330 to 1800	high

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
New Zealand Class	UN1993	FLAMMABLE LIQUID, N.O.S. (acetone, ethanol)	3	II		Hazchem code 3YE Special provisions 274, 330
ADG Class	UN1993	FLAMMABLE LIQUID, N.O.S. (acetone, ethanol)	3	II		Hazchem code •3YE Special provisions 274
UN Class	UN1993	FLAMMABLE LIQUID, N.O.S. (acetone, ethanol)	3	II		Special provisions 274
ADR/RID Class	UN1993	FLAMMABLE LIQUID, N.O.S. (acetone, ethanol)	3	II		Hazard identification number 33 Limited quantity 1 L Special provisions 601, 274, 640C Tunnel code (D/E)

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Section 14. Transport information

IATA Class	UN1993	Flammable liquid, n.o.s. (acetone, ethanol)	3	II		<u>Passenger and Cargo Aircraft</u> Quantity limitation: 5 L Packaging instructions: 353 <u>Cargo Aircraft Only</u> Quantity limitation: 60 L Packaging instructions: 364 <u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 1 L Packaging instructions: Y341 <u>Special provisions</u> A3
IMDG Class	UN1993	FLAMMABLE LIQUID, N.O.S. (acetone, ethanol)	3	II		<u>Emergency schedules (EmS)</u> F-E, _S-E_ <u>Special provisions</u> 274

PG* : Packing group

Section 15. Regulatory information

New Zealand Inventory of Chemicals (NZIoC) : Not determined.

HSNO Approval Number : Not available.

HSNO Group Standard : Not available.

HSNO Classification : 3.1 - FLAMMABLE LIQUIDS - Category B
 6.1 - ACUTE TOXICITY (oral) - Category E
 6.3 - SKIN IRRITATION - Category B
 6.4 - EYE IRRITATION - Category A (Irritant)
 6.5 - SENSITIZATION - Category B (Skin)
 6.8 - REPRODUCTIVE AND DEVELOPMENTAL TOXICITY - Category C

Australia inventory (AICS) : Not determined.

Safety, health and environmental regulations specific for the product : No known specific national and/or regional regulations applicable to this product (including its ingredients).

Section 16. Other information

History

Date of issue/Date of revision : 2/26/2015.
Date of previous issue : No previous validation.
Version : 1
Prepared by : IHS

Section 16. Other information

Key to abbreviations

: ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
UN = United Nations

References

: GHS - Globally Harmonized System of Classification and Labeling of Chemicals
International transport regulations

✓ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.