Material Safety Data Sheet

NX3 Nexus® Third Generation Dual Cure Base and Catalyst

1 . Identification of the material and supplier

Names

Product name : NX3 Nexus® Third Generation Dual Cure Base and Catalyst

ADG : Not regulated.

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
Email technical queries: peter.green@sybrondental.com

Emergency telephone number : 61 401 690 670 (24 hours)

Uses

Area of application : Professional applications.

Material uses : Dental product: Permanent cement

Product type : Paste.

2 . Hazards identification

Classification : Xi; R36/37/38

Risk phrases : R36/37/38- Irritating to eyes, respiratory system and skin.

Statement of hazardous/ dangerous nature : HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS.

Health effects are based on the uncured material.

3 . Composition/information on ingredients

Mixture : Yes.

Ingredient name	CAS number	Concentration
glass, oxide, chemicals	65997-17-3	30-60
ytterbium trifluoride	13760-80-0	10-30
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene] bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	41637-38-1	<10
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5, 12-diazahexadecane-1,16-diyl bismethacrylate	72869-86-4	<10
2,2'-ethylenedioxydiethyl dimethacrylate	109-16-0	<10
2-Hydroxyethyl methacrylate	868-77-9	<10
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	68909-20-6	<10
Cumene hydroperoxide	80-15-9	<10
1,1,3,3-tetramethylbutyl hydroperoxide	5809-08-5	<10
2-Pyridylthiourea	14294-11-2	<10
Oils, peppermint	8006-90-4	<10

Other ingredients, determined not to be hazardous according to Safe Work Australia criteria, and not dangerous according to the ADG Code, make up the product concentration to 100%.

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.

4 . First-aid measures

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.

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.

Advice to doctor : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

5 . Fire-fighting measures

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : 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.

In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
phosphorus oxides
halogenated compounds
metal oxide/oxides

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.

6 . Accidental release measures

Personal precautions : 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 for 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.

7 . Handling and storage

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.

Storage : Store in accordance with local regulations. 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. 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.

Combustible liquid Not applicable.

8 . Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
glass, oxide, chemicals	**ACGIH TLV (United States, 4/2014).** TWA: 5 mg/m³ Form: Respirable TWA: 10 mg/m³ Form: Total dust
ytterbium trifluoride	**Safe Work Australia (Australia, 1/2014).** TWA: 2.5 mg/m³, (as F) 8 hours.
Silanamine, 1,1,1-trimethyl-N-(trimethylsilyl)-, hydrolysis products with silica	**ACGIH TLV (United States, 4/2014).** TWA: 10 mg/m³ 8 hours. Form: Inhalable TWA: 3 mg/m³ 8 hours. Form: Respirable

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.

Exposure controls

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

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

Eyes : 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 or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Hands : 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.

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

Skin : 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.

9 . Physical and chemical properties

Physical state : Liquid. [Paste.]
Colour : Various
Odour : Fruity ester-like
Boiling point : Not available.
Melting point : Not available.
Vapour pressure : Not available.
Relative density : 2 to 2.5 [Water = 1]
Flash point : Not available.
Flammable limits : Not available.
Vapour density : Not available.
pH : Not available.
Viscosity : Not available.
Auto-ignition temperature : Not available.
Solubility : Insoluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Chemical stability : The product is stable.
Possibility of hazardous reactions : Hazardous reactions or instability may occur under certain conditions of storage or use.
Hazardous polymerization may occur under certain conditions of storage or use.
Conditions to avoid : Keep away from heat and direct sunlight. Heat can cause polymerization with rapid release of energy.
Materials to avoid : Reactive or incompatible with the following materials: oxidizing materials and reducing materials.
Amines. Peroxide.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 . Toxicological information

Potential acute health effects

Inhalation : Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : Irritating to mouth, throat and stomach.
Skin contact : Irritating to skin.
Eye contact : Irritating to eyes.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-ethylenedioxydiethyl dimethacrylate	LD50 Oral	Rat	10837 mg/kg	-
2-Hydroxyethyl methacrylate	LD50 Oral	Rat	4230 mg/kg	-
Cumene hydroperoxide	LD50 Dermal	Rat	500 mg/kg	-
	LD50 Oral	Rat	382 mg/kg	-
Oils, peppermint	LD50 Oral	Rat	2426 mg/kg	-

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

Potential chronic health effects

Chronic toxicity

Conclusion/Summary : Not available.

11 . Toxicological information

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Cumene hydroperoxide	Skin - Mild irritant	Rabbit	-	500 milligrams	-

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary

Skin : Kligman score: Grade I (weak sensitizer)

Carcinogenicity

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Chronic effects : 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 : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing

Ingestion : No specific data.

Skin : Adverse symptoms may include the following:
irritation
redness

Eyes : Adverse symptoms may include the following:
irritation
watering
redness

Target organs : Contains material which may cause damage to the following organs: upper respiratory tract, skin, bones, eye, lens or cornea.

12 . Ecological information

Ecotoxicity : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
2-Hydroxyethyl methacrylate	Acute LC50 227000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
Cumene hydroperoxide	Acute LC50 3.9 mg/l	Fish - Oncorhynchus mykiss	96 hours

Conclusion/Summary : Not available.

Other ecological information

12 . Ecological information

Persistence/degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-Hydroxyethyl methacrylate	301C Ready Biodegradability - Modified MITI Test (I)	92 to 100 % - 14 days	-	-
Cumene hydroperoxide	301E Ready Biodegradability - Modified OECD Screening Test	18 % - 28 days	-	-

Conclusion/Summary : Not available.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-Hydroxyethyl methacrylate	-	-	Readily
Cumene hydroperoxide	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Poly(oxy-1,2-ethanediyl), α,α'-[(1-methylethylidene)di-4,1-phenylene]bis[ω-[(2-methyl-1-oxo-2-propen-1-yl)oxy]-	3.43 to 5.62	2372	high
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane-1,16-diyl bismethacrylate	3	-	low
2,2'-ethylenedioxydiethyl dimethacrylate	1.88	-	low
2-Hydroxyethyl methacrylate	0.42	-	low
Cumene hydroperoxide	1.6	9	low
1,1,3,3-tetramethylbutyl hydroperoxide	2.9	-	low

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

13 . Disposal considerations

Methods of disposal : 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.

14 . Transport information

International transport regulations

ADG/ADR/IMDG/IATA : Not regulated.

15 . Regulatory information

Standard Uniform Schedule of Medicine and Poisons

7

Control of Scheduled Carcinogenic Substances

No listed substance

Australia inventory (AICS) : Not determined.

EU Classification : Xi; R36/37/38

16 . Other information

Person who prepared the MSDS	:	
Date of previous issue	:	No previous validation
Date of issue/ Date of revision	:	5/15/2015
Version	:	1

Indicates information that has changed from previously issued version.

Disclaimer

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.