

SAFETY DATA SHEETS

This SDS packet was issued with item:

074304150

The safety data sheets (SDS) in this packet apply to one or more components included in the items listed below. Items listed below may require one or more SDS. Please refer to invoice for specific item number(s).

074302709 074302717 074302725 074302733 074303400 074303418 074303426 074303434 074304069 074304093

074304127

KERR

Material Safety Data Sheet

in accordance with Community Regulation 2006/1907/EC (R.E.A.Ch.)

Revision Date: 28th May 2009

SECTION 1

Product & Company identification

1.1 Product name

PERMLASTIC BASE (Regular, Light & Heavy Bodies)

1.2 Uses/Application:

Dental impression material.

1.3 Company (Name, address and info phone number)

KERR ITALIA s.r.l.

Via Passanti, 332

84018 Scafati (SA) - Italy

00-800-41-050-505

1.4 Emergency phone (according to communitarian directive 99/45/EC, article 17)

+39.081.8508.325 (08.00-17.00, European time, GMT+1)

E-mail address: safety@kerrhawe.com

SECTION 2

Hazard identification

2.1 Hazard classification (according to communitarian directives 67/548/EEC & 99/45/EC)

Toxic for Reproduction (Cat. 1-2); Toxic to aquatic organisms.

2.2 Other hazard

None.

SECTION 3

Composition/Information on Ingredients

(according to communitarian directives 67/548/EEC, 99/45/EC & 2001/58/EC)

3.1 Hazardous ingredients

| HAZARDOUS INGREDIENTS | % | HAZARD SYMBOLS | RISK PHRASES | CAS N. | EINECS N. |
|------------------------------|-------|----------------|--------------|------------|-----------|
| Polysulfide polymer | 60-75 | None | 52-53 | 68611-50-7 | Polymer |
| Butyl Benzyl Phthalate (BBP) | 5-10 | T; N | 61-62-50/53 | 85-68-7 | 201-622-7 |
| Octamethylcyclotetrasiloxane | 1 | Xn | 62-53 | 556-67-2 | 209-136-7 |

3.2 Other non-hazardous ingredients

None.

SECTION 4**First aid measures**

- 4.1 Treatment for eye contact: Flush with large amounts of water.
- 4.2 Treatment for skin contact: Normal hygienic practices.
- 4.3 Treatment for inhalation (breathing): None particular.
- 4.4 Treatment for ingestion (swallowing): Induce vomiting. Consult a physician.

SECTION 5**Fire-fighting Measures**

- 5.1 Suitable extinguishing media: Not applicable.
- 5.2 Forbidden extinguishing media: Not determined.
- 5.3 Special fire fighting measures: None.
- 5.4 Unusual fire and explosion hazards: Unknown.
- 5.5 Special protection equipment: Sealed overall.

SECTION 6**Accidental Release Measures**

- 6.1 Personal Precautions: Follow recommended precautions listed in other sections.
- 6.2 Environmental Precautions: Material should not be allowed to drain into sewers.
- 6.3 Reclaiming Methods: Absorb spill with paper towels and transfer into suitable containers.

SECTION 7**Handling and Storage** (according to article 5 of communitarian directive 98/24/EC)

- 7.1 Handling Precautions: Excessive heat may cause the aging of the product.
- 7.2 Precautions in case of Fire and Explosion: Extinguish all ignition sources.
- 7.3 Storage Conditions: Store at ambient temperature in a dry place
- 7.4 Suggested container(s): Original sealed containers provided by manufacturer.
- 7.5 Indication for Combined Storage: Avoid powerful reducing agents.
- 7.6 Environmental precautions: Do not allow product to reach sewers and rivers.
- 7.7 Other Precautions: Keep out of the reach of children. Do not ingest. Avoid contamination of food. Use according to directions.

| SECTION 8 | |
|--|---|
| Exposure controls/personal protection | |
| <i>8.1 Exposure Limits:</i> | For BBP: <u>TWA/TLV</u> : 3 mg/m ³ (Germany, Austria, Denmark & Sweden); <u>STEL</u> : 5 mg/m ³ (Austria & Sweden); 15 mg/m ³ (Great Britain) |
| <i>8.2 Exposure control measures</i> | |
| <i>8.2.1 Precautionary Measures:</i> (according to communitarian directives 89/686/EEC & article 4 of 98/24/EC) | |
| Ventilation: | <u>Local Exhaust Ventilation</u> : Good general ventilation should be sufficient to keep vapour concentration under listed limits. <u>Special Ventilation</u> : None. <u>Mechanical (General) Ventilation</u> : Should be sufficient. <u>Other Ventilation</u> : None. |
| Respiratory Protection: | When vapour concentration exceeds exposure limits, use self-contained breathing apparatus. |
| Hands Protection: | Impervious rubber or nitrile gloves. |
| Eyes Protection: | Safety glasses. |
| Skin Protection: | Handle in accordance with good personal hygiene and safety practices. |
| Other Protective Equipments: | It would be better use a lab coat. |
| <i>Measures listed in this paragraph are to be considered as indications and NOT prescriptions (89/656/EEC)</i> | |
| <i>8.2.2 Environment exposure control measures</i> Not Applicable. | |

| SECTION 9 | |
|---|--|
| Physical and Chemical Properties | |
| <i>9.1 General information</i> | |
| <u>Appearance</u> : White paste | <u>Odour</u> : Sulphur odour |
| <i>9.2 Information related to health, safety and environment</i> | |
| <u>pH</u> : Not determined | <u>Relative density</u> : Not available |
| <u>Boiling point</u> : Not applicable (N/A) | <u>Specific gravity</u> : > 1 g/ml |
| <u>Flash point</u> : N/A | <u>Solubility</u> : Insoluble in water |
| <u>Flammability</u> : Not flammable. | <u>Partition coefficient n-octanol/water</u> : N/D |
| <u>Lower Explosivity Limit (L.E.L.)</u> : N/A | <u>Viscosity</u> : Similar to water |
| <u>Upper Explosivity Limit (U.E.L.)</u> : N/A | <u>Vapour density (air = 1)</u> : N/A |
| <u>Oxidizing properties</u> : None | <u>Evaporation rate (n-butane = 1)</u> : N/A |
| <u>Vapour pressure</u> : N/A | <u>Melting point</u> : N/A |
| <i>9.3 Other information (according to communitarian directives 94/9/EC):</i> | |
| <u>Miscibility</u> : N/A. | <u>Conducibility</u> : N/A |
| <u>Solubility in Lipids</u> : N/A | <u>Gases Group</u> : N/A |

SECTION 10**Stability and Reactivity**

Stability: Stable.

10.1 Conditions to avoid: Excessive heat may cause the aging of the product.

10.2 Materials to avoid (incompatibility): Avoid powerful reducing agents.

10.3 Hazardous decomposition products: Sulphur gases may form.

Other precautions:

Hazardous Polymerization Products: Will not occur

Safety significance in case of change in physical appearance: None known

Stabilizers: No stabilizers are present in this product.

SECTION 11**Toxicological Information**

CMR effects (Carcinogenicity, Mutagenicity and toxicity for reproduction):

Possible.

Effects and hazards of eye contact: May cause irritation.

Effects and hazards of skin contact: May cause mild irritation.

Effects and hazards of Inhalation (Breathing): May cause low or mild irritation.

Effects and hazards of Ingestion (Swallowing): Although ingestion is an unlike event, ingestion of uncured material may pose health hazard for reproduction (see Section 2.1).

Effects for prolonged Exposure: Same health hazards listed in Effects of ingestion (current section).

Toxic-kinetic effects: Unknown.

Effects on metabolism: Unknown.

Toxicological data for ingredients:

| | | |
|-----------------------------|--|---------------|
| Polysulphide Polymer | LD ₅₀ (oral rat): | > 5000 mg/Kg |
| BBP | LD ₅₀ (oral rat): | 20400 mg/Kg |
| | LD ₅₀ (skin rabbit): | > 10000 mg/Kg |
| | LC ₅₀ (inhalation rat/4 hours): | > 6,7 mg/l |

SECTION 12**Ecological Information**

This product has not known ecological hazardous effects.

12.1 Eco-toxicity: Not available

12.2 Mobility: Not available

12.3 Persistence and degradability: Not available

12.4 Bioaccumulative potential: Data available for BBP only: 12 BCF, based on parent compound analysis;
Log Pow: 4.58.

12.5 Results of PBT (Persistent Bio-Toxicity) assessment: Not available

12.6 Other adverse effects: Not available

Aquatic toxicity data for single ingredient:

| | | |
|-----------------------------|---|------------------------|
| Polysulphide Polymer | LC ₅₀ (pimephales promelas): | 320 mg/l (96 hours) |
| | LC ₅₀ (cyprinodont variegatus): | > 1000 mg/l (96 hours) |
| | EC ₅₀ (daphnia magna): | 32 mg/l (48 hours) |
| | LC ₅₀ (mysidopsis bahia): | 59 mg/l (96 hours) |
| | EC ₅₀ (alga, selenastrum capricornutum): | 17 mg/l (72 hours) |
| BBP | LC ₅₀ (fishes, trout): | 1,1 mg/l (96 hours) |
| | LC ₅₀ (fathead minnow): | 1,5 mg/l (96 hours) |
| | LC ₅₀ (daphnia, water flea): | 1,7 mg/l (48 hours) |
| | LC ₅₀ (alga): | 1,5 mg/l (72 hours) |

SECTION 13**Disposal considerations**

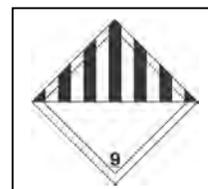
Dispose of in accordance of local regulations.

SECTION 14**Transport information**14.1 Sea transportation (IMDG)

UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F

Stowage/segregation: Category A; Limited Quantity: 5 Kg

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.

14.2 Air transportation (ICAO/IATA)

UN number: 3077 Class: 9 Packing group: III Labels: 9

Maximum quantities: No limits (for both Passenger Aircraft and Cargo Aircraft only)

Limited Quantity: 30 Kg G Proper shipping name: Environmentally

hazardous substance, solid, n.o.s.

14.3 Transportation by Road/Railway (RID/ADR)

UN number: 3077 Class: 9 Packing group: III Labels: 9

Limited Quantity: LQ27 (6 Kg/30 Kg for combined, 6 Kg/20 Kg for bandaged trays).

External package type: carton (4G) both for simple and combined packages;

Proper shipping name: Environmentally hazardous substance, solid, n.o.s.

SECTION 15 (Classification according to communitarian directives 67/548/EEC & 99/45/EC)**Regulatory information**

Hazard labelling not required.

This product is an exempted medical device (directive 1999/45/EC, article 1, paragraph 5g).

SECTION 16**Other information**16.1 Risk phrases of all ingredients

- 61 May cause harm to the unborn child.
 62 Possible risk of impaired fertility.
 50/53 Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.
 52 Harmful to aquatic organisms
 53 May cause long-term adverse effects in the aquatic environment.

16.1.1 Safety phrases of all ingredients

- 23 Do not breathe vapour
 60 This material and its container must be disposed of as hazardous waste
 61 Avoid release to the environment. Refer to special instructions / safety data sheets.

16.2 Sources of key data used to compile the Safety Data Sheet:European Chemicals Bureau (ECB – www.ecb.jrc.it)European chemical Substances Information System (ESIS - www.ecb.jrc.it/esis)A.C.G.I.H. (www.acgih.org)N.I.O.S.H. (www.cdc.gov/niosh/)O.S.H.A. (www.osha.gov/)U.E. (www.europa.eu/index_it.htm)I.A.R.C. (www.iarc.fr/)N.T.P. (www.ntp.niehs.nih.gov)European Community Directives:

| | |
|-------------|---|
| 67/548/EEC: | Classification, packaging and labelling of dangerous substances. |
| 99/45/EC: | Directive concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations. |
| 2001/58/EC: | Second amendment of directive 91/155/EEC for the definition of a detailed arrangement of specific information relating to dangerous preparations (art. 14 of 99/45/EC) and substances (art. 27 of 67/548/EEC). |
| 89/656/EEC: | Directive on the minimum health and safety requirements for the use by workers of personal protective equipment at the workplace (third individual directive within the meaning of Article 16 (1) of Directive 89/391/EEC). |
| 89/686/EEC: | Approximation of the laws of the Member States relating to personal protective equipment. |
| 94/9/EC: | Approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres |
| 98/24/EC: | Protection of the health and safety of workers from the risks related to chemical agents at work. |

Document modification history:15th September 2008First version in compliance of Community Regulation 2006/1907/EC (R.E.A.Ch.)28th May 2009Second revision: Change in transport hazard classification (Section 14).**CAUTION: PRODUCT FOR PROFESSIONAL USE**

The information on this Safety Sheet is based on presently available data and to our best knowledge for the correct handling of the product under normal conditions. Any use of this product in any way not indicated on this Sheet or the use of this product together with any other process/procedure will be exclusively under the user's responsibility. This document does not constitute explicit or implicit warranty of product quality or fitness for a particular purpose.

Kerr™ Material Safety Data Sheet

Permlastic Base

1 . Identification of the material and supplier

Names

Product name : Permlastic Base
ADG : UN3077
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: kerrrust.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 Products: Denture impression material.
Product type : Solid.

2 . Hazards identification

Classification : Repr. Cat. 2; R61
Repr. Cat. 3; R62
N; R51/53
Risk phrases : R61- May cause harm to the unborn child.
R62- Possible risk of impaired fertility.
R51/53- Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety phrases : S53- Avoid exposure - obtain special instructions before use.
S36/37- Wear suitable protective clothing and gloves.
S61- Avoid release to the environment. Refer to special instructions/safety data sheet.
Statement of hazardous/dangerous nature : HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

3 . Composition/information on ingredients

Mixture : Yes.
Synonyms : Light-Bodied Permlastic; Regular Permlastic; Heavy-Bodied Permlastic

| Ingredient name | CAS number | Concentration |
|-----------------|------------|---------------|
| BBP | 85-68-7 | <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** : Large quantity :Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : No special protection is 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** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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.
- Advice to doctor** : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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. This material is toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
No specific fire or explosion hazard.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur 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.
- Hazchem code** : 2Z

6 . Accidental release measures

- Personal precautions** : Small Quantity. For professional use only. Absorb with an inert material and transfer the spilt material and absorbent to an appropriate waste disposal container.
- 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). Water polluting material. May be harmful to the environment if released in large quantities.
- 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** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Refer to special instructions/safety data sheet. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- 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 |
|-----------------|--|
| BBP | EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 5 mg/m ³ 8 hours. |

- 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. Large scale processes: If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

8 . Exposure controls/personal protection

- Hygiene measures** : No special measures are required for small quantities under normal and intended conditions of product use. Large scale processes: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- 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: safety glasses with side-shields.
- 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** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Lab coat.
- Environmental exposure controls** : No special measures are required for small quantities under normal and intended conditions of product use. Large scale processes: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

- Physical state** : Solid. [Paste.]
- Colour** : White.
- Odour** : Sulfur.
- Boiling point** : Not available.
- Melting point** : Not available.
- Vapour pressure** : Not available.
- 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.

Permlastic Base

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.
Under normal conditions of storage and use, hazardous polymerisation will not occur.
- Conditions to avoid** : Avoid excessive heat.
- Materials to avoid** : Reactive or incompatible with the following materials: reducing materials.
- 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** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Eye contact** : No known significant effects or critical hazards.

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-------------|---------|--------------|----------|
| BBP | LD50 Dermal | Rabbit | >10000 mg/kg | - |
| | LD50 Dermal | Rat | 6700 mg/kg | - |
| | LD50 Oral | Rat | 2330 mg/kg | - |

- Conclusion/Summary** : Not available.

Potential chronic health effects

Chronic toxicity

- Conclusion/Summary** : Not available.

Irritation/Corrosion

Conclusion/Summary

- Skin** : Mucosal tissue: the average mucosal irritation score was within acceptable limits.
The test article was not considered an irritant to the mucosal tissue of the rabbit and therefore not irritating to the mouth.

Sensitiser

| Product/ingredient name | Route of exposure | Species | Result |
|-------------------------|-------------------|------------|-----------------|
| Permlastic Base | skin | Guinea pig | Not sensitizing |

- Conclusion/Summary** : Not available.

Carcinogenicity

- Conclusion/Summary** : Not available.

Mutagenicity

- Conclusion/Summary** : Not available.

Teratogenicity

- Conclusion/Summary** : Not available.

Reproductive toxicity

- Conclusion/Summary** : Not available.

| Product name | Carcinogenic effects | Mutagenic effects | Developmental effects | Fertility effects |
|--------------|----------------------|-------------------|-----------------------|-------------------|
| BBP | - | - | Repr. Cat. 2; R61 | Repr. Cat. 3; R62 |

11 . Toxicological information

- 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 : May cause birth defects.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : May impair fertility, based on animal data.

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:
 reduced foetal weight
 increase in foetal deaths
 skeletal malformations
- Eyes** : No specific data.
- Target organs** : Contains material which may cause damage to the following organs: the reproductive system, mucous membranes, upper respiratory tract, skin, eyes, nose/ sinuses, ovary, testes.

12 . Ecological information

- Ecotoxicity** : Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Aquatic ecotoxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|------------------------------------|---|----------|
| BBP | Acute EC50 0.22 ppm Marine water | Algae - Skeletonema costatum | 72 hours |
| | Acute EC50 100 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 900 µg/l Fresh water | Crustaceans - Americamysis bahia | 48 hours |
| | Acute EC50 0.76 mg/l Fresh water | Daphnia - Daphnia magna | 2 days |
| | Acute LC50 510 µg/l Marine water | Fish - Cymatogaster aggregata - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Chronic NOEC 60 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Chronic NOEC 0.26 mg/l Fresh water | Daphnia - Daphnia magna | 21 days |

- Conclusion/Summary** : Not available.

Other ecological information

Persistence/degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|-------------------------|--|----------------|------|----------|
| BBP | 301B Ready Biodegradability - CO2 Evolution Test | 93 % - 28 days | - | - |

- Conclusion/Summary** : Not available.

Permlastic Base

12 . Ecological information

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| BBP | - | - | Readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|---------|-----------|
| BBP | 4.77 | 1693.25 | high |

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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spill material and runoff and contact with soil, waterways, drains and sewers.

14 . Transport information

International transport regulations

| Regulation | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|------------|-----------|---|---------|-----|--|--|
| ADG | UN3077 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O.S. (BBP) | 9 | III |   | The product is not regulated as a dangerous good when transported by road or rail in either an IBC, or in other container types if ≤500 kg. The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Hazchem code 2Z Special provisions 179, 274, 331, 335, AU01 |
| | | | | | | |

14 . Transport information

| | | | | | | |
|-------------|--------|---|---|-----|---|---|
| ADR | UN3077 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O.S. (BBP) | 9 | III |   | <p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Hazard identification number</u> 90</p> <p><u>Limited quantity</u> 5 kg</p> <p><u>Special provisions</u> 274, 335, 601</p> <p><u>Tunnel code</u> (E)</p> |
| IMDG | UN3077 | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O.S. (BBP). Marine pollutant (BBP) | 9 | III |   | <p>The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Emergency schedules (EmS)</u> F-A, S-F</p> <p><u>Special provisions</u> 274, 335, 966, 967</p> |
| IATA | UN3077 | Environmentally hazardous substance, solid, n.o.s. (BBP) | 9 | III |   | <p>The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.</p> <p><u>Passenger and Cargo Aircraft</u> Quantity limitation: 400 kg Packaging instructions: 956</p> <p><u>Cargo Aircraft Only</u> Quantity limitation: 400 kg Packaging instructions: 956</p> <p><u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 30 kg Packaging instructions: Y956</p> <p><u>Special provisions</u> A97, A158, A179</p> |

PG* : Packing group

15 . Regulatory information

Standard Uniform Schedule of Medicine and Poisons

Not regulated.

Control of Scheduled Carcinogenic Substances

No listed substance

Australia inventory (AICS) : Not determined.

EU Classification : Repr. Cat. 2; R61
Repr. Cat. 3; R62
N; R51/53

16 . Other information

Person who prepared the MSDS : IHS

Date of previous issue : 1/06/2014.

Date of issue/ Date of revision : No previous validation.

Version : 1

I 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.