



## Freedom

### SDI Limited

Version No: 6.1.1.1

Safety Data Sheet according to WHS and ADG requirements

Issue Date: 18/03/2016

Print Date: 22/03/2016

Initial Date: Not Available

L.GHS.AUS.EN

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

### Product Identifier

|                               |               |
|-------------------------------|---------------|
| Product name                  | Freedom       |
| Synonyms                      | Not Available |
| Other means of identification | Not Available |

### Relevant identified uses of the substance or mixture and uses advised against

|                          |   |
|--------------------------|---|
| Relevant identified uses | For filling of cavitated teeth by dental professionals. |
|--------------------------|---|

### 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                 | www.sdi.com.au                                    | www.sdi.com.au   | www.sdi.com.au                          |
| Email                   | info@sdi.com.au                                   | brasil@sdi.com.au  | germany@sdi.com.au                      |

|                         |   |
|-------------------------|---|
| Registered company name | SDI (North America) Inc.                            |
| Address                 | 1279 Hamilton Parkway IL Itasca 60143 United States |
| Telephone               | +1 630 361 9200 (Business hours)                    |
| Fax                     | Not Available                                       |
| Website                 | Not Available                                       |
| Email                   | USA.Canada@sdi.com.au                               |

### 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

### Classification of the substance or mixture


**HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.**

|                    |  |
|--------------------|--|
| Poisons Schedule   | Not Applicable   |
| Classification [1] | Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation) |
| Legend:            | 1. Classification by vendor; 2. Classification drawn from HSIS; 3. Classification drawn from EC Directive 1272/2008 - Annex VI   |

### Label elements

Continued...

## Freedom

|                    |   |
|--------------------|---|
| GHS label elements |  |
|--------------------|---|

|             |                |
|-------------|----------------|
| SIGNAL WORD | <b>WARNING</b> |
|-------------|----------------|

**Hazard statement(s)**

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

**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 dust/fume/gas/mist/vapours/spray.                          |
| P272 | Contaminated work clothing should not be allowed out of the workplace.     |

**Precautionary statement(s) Response**

|                |  |
|----------------|--|
| P362           | Take off contaminated clothing and wash before reuse.  |
| P363           | Wash contaminated clothing before reuse.   |
| P302+P352      | IF ON SKIN: Wash with plenty of soap and water.  |
| 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 or doctor/physician 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.  |
| P304+P340      | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.                                 |

**Precautionary statement(s) Storage**

|           |  |
|-----------|--|
| P405      | Store locked up.   |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |

**Precautionary statement(s) Disposal**

|      |   |
|------|---|
| P501 | Dispose of contents/container in accordance with local regulations. |
|------|---|

**SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No     | %[weight] | Name                      |
|------------|-----------|---------------------------|
| 72869-86-4 | 10-20     | diurethane dimethacrylate |

**SECTION 4 FIRST AID MEASURES****Description of first aid measures**

|                     |  |
|---------------------|--|
| <b>Eye Contact</b>  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ 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.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>                                      |
| <b>Skin Contact</b> | <p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>  |
| <b>Inhalation</b>   | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul> |
| <b>Ingestion</b>    | <ul style="list-style-type: none"> <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> </ul> <p>If irritation continues, seek medical attention.</p>  |

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 FIREFIGHTING MEASURES****Extinguishing media**

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

**Special hazards arising from the substrate or mixture**

|                             |  |
|-----------------------------|--|
| <b>Fire Incompatibility</b> | ▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |
|-----------------------------|--|

**Advice for firefighters**

|                              |  |
|------------------------------|--|
| <b>Fire Fighting</b>         | <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Fight fire from a safe distance, with adequate cover.</li> <li>▶ If safe, switch off electrical equipment until vapour fire hazard removed.</li> <li>▶ Use water delivered as a fine spray to control the fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>Do not</b> 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> </ul> |
| <b>Fire/Explosion Hazard</b> | <ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> <p>Combustion products include; carbon dioxide (CO<sub>2</sub>) other pyrolysis products typical of burning organic material</p>  |

**SECTION 6 ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

|                     |   |
|---------------------|---|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <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>  |
| <b>Major Spills</b> | <p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite.</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul> |

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

**SECTION 7 HANDLING AND STORAGE****Precautions for safe handling**

|                      |   |
|----------------------|---|
| <b>Safe handling</b> | <ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ <b>DO NOT allow material to contact humans, exposed food or food utensils.</b></li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> |
|----------------------|---|

## Freedom

|                          |   |
|--------------------------|---|
|                          | <ul style="list-style-type: none"> <li>Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul> |
| <b>Other information</b> | <p>Store in a dry and well ventilated-area, away from heat and sunlight.<br/>Store between 10 and 25 deg. C.<br/><b>Do not</b> store in direct sunlight.</p>                      |

**Conditions for safe storage, including any incompatibilities**

|                                |   |
|--------------------------------|---|
| <b>Suitable container</b>      | <ul style="list-style-type: none"> <li><b>DO NOT repack.</b> Use containers supplied by manufacturer only.</li> </ul> |
| <b>Storage incompatibility</b> | <ul style="list-style-type: none"> <li>Avoid storage with reducing agents.</li> </ul>                                 |

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****Control parameters****OCCUPATIONAL EXPOSURE LIMITS (OEL)****INGREDIENT DATA**

Not Available

**EMERGENCY LIMITS**

| Ingredient                | Material name             | TEEL-1               | TEEL-2                | TEEL-3                 |
|---------------------------|---------------------------|----------------------|-----------------------|------------------------|
| diurethane dimethacrylate | Diurethane dimethacrylate | 60 mg/m <sup>3</sup> | 660 mg/m <sup>3</sup> | 4000 mg/m <sup>3</sup> |

| Ingredient                | Original IDLH | Revised IDLH  |
|---------------------------|---------------|---------------|
| diurethane dimethacrylate | Not Available | Not Available |

**MATERIAL DATA****Exposure controls**

| <b>Appropriate engineering controls</b>  | <p>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.<br/>The basic types of engineering controls are:<br/>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br/>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.<br/>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection.<br/>Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.<br/>An approved self contained breathing apparatus (SCBA) may be required in some situations.<br/>Provide adequate ventilation in warehouse or closed storage area. 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.</p> |                              |   |  |  |   |                                  |  |   |  |                              |
|--|---|------------------------------|---|--|--|---|----------------------------------|--|---|--|------------------------------|
|  | <table border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td> <td>0.25-0.5 m/s (50-100 f/min.)</td> </tr> <tr> <td>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)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table>   | 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.) |
|  | 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.)  |                              |   |  |  |   |                                  |  |   |  |                              |
| <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table>  | 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   |                              |
| 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  |                              |   |  |  |   |                                  |  |   |  |                              |
| <p>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.</p> |   |                              |   |  |  |   |                                  |  |   |  |                              |

|                            |   |
|----------------------------|---|
| <b>Personal protection</b> |  |
|----------------------------|---|

|                                |   |
|--------------------------------|---|
| <b>Eye and face protection</b> | <ul style="list-style-type: none"> <li>Safety glasses with side shields.</li> <li>Chemical goggles.</li> <li>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 chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH</li> </ul> |
|--------------------------------|---|

## Freedom

|                              |   |
|------------------------------|---|
|                              | ▶ Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]   |
| <b>Skin protection</b>       | See Hand protection below   |
| <b>Hands/feet protection</b> | <ul style="list-style-type: none"> <li>▶ Wear chemical protective gloves, e.g. PVC.</li> <li>▶ Wear safety footwear or safety gumboots, e.g. Rubber</li> <li>▶ Rubber Gloves</li> </ul>   |
| <b>Body protection</b>       | See Other protection below  |
| <b>Other protection</b>      | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> <li>▶ Eyewash unit.</li> <li>▶ Ensure there is ready access to a safety shower.</li> </ul> |
| <b>Thermal hazards</b>       | Not Available   |

**Respiratory protection**

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

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|------------------------------------|----------------------|----------------------|------------------------|
| up to 10 x ES                      | A-AUS                | -                    | A-PAPR-AUS / Class 1   |
| up to 50 x ES                      | -                    | A-AUS / Class 1      | -                      |
| up to 100 x ES                     | -                    | A-2                  | A-PAPR-2 ^             |

^ - 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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES****Information on basic physical and chemical properties**

|   |   |  |                |
|---|---|--|----------------|
| <b>Appearance</b>                                   | Tooth coloured viscous/ flowable paste, ester-like odour, insoluble in water. |  |                |
| <b>Physical state</b>                               | Free-flowing Paste  | <b>Relative density (Water = 1)</b>            | 2.0            |
| <b>Odour</b>  | Not Available   | <b>Partition coefficient n-octanol / water</b> | Not Available  |
| <b>Odour threshold</b>                              | Not Available   | <b>Auto-ignition temperature (°C)</b>          | Not Available  |
| <b>pH (as supplied)</b>                             | Not Available   | <b>Decomposition temperature</b>               | Not Available  |
| <b>Melting point / freezing point (°C)</b>          | Not Available   | <b>Viscosity (cSt)</b>                         | Not Available  |
| <b>Initial boiling point and boiling range (°C)</b> | Polymerise before boiling   | <b>Molecular weight (g/mol)</b>                | Not Applicable |
| <b>Flash point (°C)</b>                             | Not Available   | <b>Taste</b>                                   | Not Available  |
| <b>Evaporation rate</b>                             | Not Available   | <b>Explosive properties</b>                    | Not Available  |
| <b>Flammability</b>                                 | Not Available   | <b>Oxidising properties</b>                    | Not Available  |
| <b>Upper Explosive Limit (%)</b>                    | Not Available   | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available  |
| <b>Lower Explosive Limit (%)</b>                    | Not Available   | <b>Volatile Component (%vol)</b>               | Not Available  |
| <b>Vapour pressure (kPa)</b>                        | Not Available   | <b>Gas group</b>                               | Not Available  |
| <b>Solubility in water (g/L)</b>                    | Immiscible  | <b>pH as a solution (1%)</b>                   | Not Available  |
| <b>Vapour density (Air = 1)</b>                     | Not Available   | <b>VOC g/L</b>                                 | Not Available  |

**SECTION 10 STABILITY AND REACTIVITY**

|   |   |
|---|---|
| <b>Reactivity</b>                         | See section 7   |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Presence of heat source and ignition source</li> </ul> Product is considered stable under normal handling conditions<br>Stable under normal storage conditions |
| <b>Possibility of hazardous reactions</b> | See section 7   |
| <b>Conditions to avoid</b>                | See section 7   |
| <b>Incompatible materials</b>             | See section 7   |
| <b>Hazardous decomposition products</b>   | See section 5   |

**SECTION 11 TOXICOLOGICAL INFORMATION****Information on toxicological effects**

Continued...

## Freedom

| 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.  |          |            |   |               |
|---|---|----------|------------|---|---------------|
| Ingestion                                   | The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.  |          |            |   |               |
| 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.<br>The material may accentuate any pre-existing dermatitis condition<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>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. |          |            |   |               |
| Eye   | 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.<br>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.<br>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.<br>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.  |          |            |   |               |
| Freedom                                     | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Not Available</td> <td>Not Available</td> </tr> </tbody> </table>   | TOXICITY | IRRITATION | Not Available                               | Not Available |
| TOXICITY                                    | IRRITATION  |          |            |   |               |
| Not Available                               | Not Available   |          |            |   |               |
| diurethane dimethacrylate                   | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Oral (rat) LD50: &gt;5000 mg/kg<sup>[1]</sup></td> <td>Not Available</td> </tr> </tbody> </table>   | TOXICITY | IRRITATION | Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup> | Not Available |
| TOXICITY                                    | IRRITATION  |          |            |   |               |
| Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup> | Not Available   |          |            |   |               |
| Legend:                                     | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances   |          |            |   |               |

|                           |  |
|---------------------------|--|
| DIURETHANE DIMETHACRYLATE | <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>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.</p>   |
|                           | <p>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.</p> <p>UV (ultraviolet)/ EB (electron beam) acrylates are generally of low toxicity</p> <p>UV/EB acrylates are divided into two groups; "stenomeric" and "eurymeric" acrylates.</p> <p>The first group consists of well-defined acrylates which can be described by a simple idealised chemical; they are low molecular weight species with a very narrow weight distribution profile.</p> <p>The eurymeric acrylates cannot be described by an idealised structure and may differ fundamentally between various suppliers; they are of relatively high molecular weight and possess a wide weight distribution.</p> <p>Stenomeric acrylates are usually more hazardous than the eurymeric substances. Stenomeric acrylates are also well defined which allows comparison and exchange of toxicity data - this allows more accurate classification.</p> <p>The stenomerics cannot be classified as a group; they exhibit substantial variation.</p> <p>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</p> <p>Monalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53</p> <p>Monoalkyl or monoaryl esters of methacrylic acid should be classified as R36/37/38</p> <p>* Possible carcinogen; possible sensitizer; possible irreversible effects * Polysciences MSDS</p> |

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

Legend: ☒ – Data available but does not fill the criteria for classification

- ✓ – Data required to make classification available  
 ⊗ – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

| Ingredient                | Endpoint | Test Duration (hr) | Species                       | Value     | Source |
|---------------------------|----------|--------------------|-------------------------------|-----------|--------|
| diurethane dimethacrylate | EC50     | 48                 | Crustacea                     | >1.2mg/L  | 2      |
| diurethane dimethacrylate | EC50     | 72                 | Algae or other aquatic plants | >0.68mg/L | 2      |
| diurethane dimethacrylate | NOEC     | 72                 | Algae or other aquatic plants | >0.21mg/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

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil               | Persistence: Air                      |
|------------|---------------------------------------|---------------------------------------|
|            | No Data available for all ingredients | No Data available for all ingredients |

### Bioaccumulative potential

| Ingredient | Bioaccumulation                       |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

### Mobility in soil

| Ingredient | Mobility                              |
|------------|---------------------------------------|
|            | No Data available for all ingredients |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| Product / Packaging disposal |  |
|------------------------------|--|
|                              | <ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> 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> </ul> Consult State Land Waste Management Authority for disposal. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| Marine Pollutant |                |
|------------------|----------------|
|                  | NO             |
| HAZCHEM          |                |
|                  | Not Applicable |

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

**DIURETHANE DIMETHACRYLATE(72869-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

Australia Inventory of Chemical Substances (AICS)

| National Inventory            | Status                        |
|-------------------------------|-------------------------------|
| Australia - AICS              | Y                             |
| Canada - DSL                  | N (diurethane dimethacrylate) |
| Canada - NDSL                 | Y                             |
| China - IECSC                 | Y                             |
| Europe - EINEC / ELINCS / NLP | Y                             |
| Japan - ENCS                  | N (diurethane dimethacrylate) |

## Freedom

|                     |  |
|---------------------|--|
| Korea - KECI        | Y  |
| New Zealand - NZIoC | Y  |
| Philippines - PICCS | Y  |
| USA - TSCA          | Y  |
| <b>Legend:</b>      | Y = All ingredients are on the inventory<br>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****Other information****Ingredients with multiple cas numbers**

| Name                      | CAS No                 |
|---------------------------|------------------------|
| diurethane dimethacrylate | 41137-60-4, 72869-86-4 |

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.

**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:

Prepared by: SDI Limited  
 3-15 Brunson Street, Bayswater Victoria, 3153, Australia

Phone Number: +61 3 8727 7111

Date of preparation/revision: 23rd September 2015

Department issuing SDS: Research and Development

Contact: Technical Director