

## **SAFETY DATA SHEETS**

**This SDS packet was issued with item:**

071368349

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

071368042 071368059 071368208 071368216 071368232 071368307 071368331 071368356 071368406 071368455

071368463 071368471 071368497 071368505 071368513



# Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2

## SDI Limited

Version No: 10.1  
Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 10/12/2021  
Print Date: 05/01/2022  
L.GHS.CAN.EN

### SECTION 1 Identification

#### Product Identifier

|                               |                                                                                                                                              |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Product name                  | Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2 |
| Chemical Name                 | Not Applicable                                                                                                                               |
| Synonyms                      | Not Available                                                                                                                                |
| Chemical formula              | Not Applicable                                                                                                                               |
| Other means of identification | Not Available                                                                                                                                |

#### Recommended use of the chemical and restrictions on use

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

#### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| Registered company name | SDI Limited                                        | SDI (North America) Inc.                            | SDI Brasil Industria E Comercio Ltda                                           |
|-------------------------|----------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------------------------------|
| Address                 | 3-15 Brunsdon Street Bayswater VIC 3153 Australia  | 1279 Hamilton Parkway Itasca IL 60143 United States | Avenida Paulista, 2300-Pilotis, Bela Vista Sao Paulo - SP CEP 01310-300 Brazil |
| Telephone               | +61 3 8727 7111                                    | +1 630 361 9200                                     | +55 11 3092 7100                                                               |
| Fax                     | +61 3 8727 7222                                    | Not Available                                       | +55 11 3092 7101                                                               |
| Website                 | <a href="http://www.sdi.com.au">www.sdi.com.au</a> | <a href="http://www.sdi.com.au">www.sdi.com.au</a>  | <a href="http://www.sdi.com.au">www.sdi.com.au</a>                             |
| Email                   | info@sdi.com.au                                    | USA.Canada@sdi.com.au                               | brasil@sdi.com.au                                                              |

|                         |                                                    |
|-------------------------|----------------------------------------------------|
| Registered company name | SDI Germany GmbH                                   |
| Address                 | Hansestrasse 85 Cologne D-51149 Germany            |
| Telephone               | +49 0 2203 9255 0                                  |
| Fax                     | +49 0 2203 9255 200                                |
| Website                 | <a href="http://www.sdi.com.au">www.sdi.com.au</a> |
| Email                   | germany@sdi.com.au                                 |

#### Emergency phone number

|                                   |                                   |
|-----------------------------------|-----------------------------------|
| Association / Organisation        | SDI Limited                       |
| Emergency telephone numbers       | 131126 Poisons Information Centre |
| Other emergency telephone numbers | +61 3 8727 7111                   |

### SECTION 2 Hazard(s) identification

#### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

|                |                                                                                                                                                                                                                         |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification | Skin Corrosion/Irritation and Serious Eye Damage/Eye Irritation Category 2 (Skin)/2B (Eye), Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3 |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Label elements

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow,  
LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

|                            |                                                                                   |
|----------------------------|-----------------------------------------------------------------------------------|
| <b>Hazard pictogram(s)</b> |  |
|----------------------------|-----------------------------------------------------------------------------------|

|                    |                |
|--------------------|----------------|
| <b>Signal word</b> | <b>Warning</b> |
|--------------------|----------------|

**Hazard statement(s)**

|                  |                                      |
|------------------|--------------------------------------|
| <b>H315+H320</b> | Causes skin and eye irritation.      |
| <b>H317</b>      | May cause an allergic skin reaction. |
| <b>H335</b>      | May cause respiratory irritation.    |

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

|             |                                                                        |
|-------------|------------------------------------------------------------------------|
| <b>P264</b> | Wash all exposed external body areas thoroughly after handling.        |
| <b>P271</b> | Use only outdoors or in a well-ventilated area.                        |
| <b>P280</b> | Wear protective gloves and protective clothing.                        |
| <b>P261</b> | Avoid breathing mist/vapours/spray.                                    |
| <b>P272</b> | Contaminated work clothing should not be allowed out of the workplace. |

**Precautionary statement(s) Response**

|                       |                                                                                                                                  |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>P302+P352</b>      | IF ON SKIN: Wash with plenty of water and soap.                                                                                  |
| <b>P305+P351+P338</b> | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| <b>P337+P313</b>      | If eye irritation persists: Get medical advice/attention.                                                                        |
| <b>P362+P364</b>      | Take off contaminated clothing and wash it before reuse.                                                                         |
| <b>P312</b>           | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.                                                            |
| <b>P333+P313</b>      | If skin irritation or rash occurs: Get medical advice/attention.                                                                 |
| <b>P304+P340</b>      | IF INHALED: Remove person to fresh air and keep comfortable for breathing.                                                       |

**Precautionary statement(s) Storage**

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

**Precautionary statement(s) Disposal**

|             |                                                                                                                                  |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|
| <b>P501</b> | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |
|-------------|----------------------------------------------------------------------------------------------------------------------------------|

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No     | %[weight] | Name                                                   |
|------------|-----------|--------------------------------------------------------|
| 72869-86-4 | 3-20      | <u>diurethane dimethacrylate</u>                       |
| 109-16-0   | 0.01-7    | <u>triethylene glycol dimethacrylate</u>               |
| 24448-20-2 | 15-18     | <u>2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane</u> |

**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, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>Other measures are usually unnecessary.</li> </ul> <p>If irritation continues, seek medical attention.</p>                                                                                                                                                                                                                                                                                     |
| <b>Ingestion</b>    | Seek medical attention.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

Continued...

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow,  
LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

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

Treat symptomatically.

## SECTION 5 Fire-fighting 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> | None known. |
|-----------------------------|-------------|

### Special protective equipment and precautions for fire-fighters

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <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>▶ Non combustible.</li> <li>▶ Not considered a significant fire risk, however containers may burn.</li> </ul> <p>May emit corrosive fumes.<br/>Decomposes on heating and produces:<br/>carbon dioxide (CO<sub>2</sub>)<br/>carbon monoxide (CO)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Minor Spills</b> | <ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Wear impervious gloves and safety goggles.</li> <li>▶ Trowel up/scrape up.</li> <li>▶ Place spilled material in clean, dry, sealed container.</li> <li>▶ Flush spill area with water.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Major Spills</b> | <p>Minor hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment as required.</li> <li>▶ Prevent spillage from entering drains or water ways.</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 and place in appropriate containers for disposal.</li> <li>▶ Wash area and prevent runoff into drains or waterways.</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> </ul> |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2

|                   |                                                                                                                                                                                                                                                  |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <div>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</div> <div>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</div> |
| Other information | Store between 10 and 25 deg. C.<br>Do not store in direct sunlight.                                                                                                                                                                              |

Conditions for safe storage, including any incompatibilities

|                         |                                                                                                                                                              |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Suitable container      | <div>▶ <b>DO NOT repack.</b> Use containers supplied by manufacturer only.</div> <div>▶ Check that containers are clearly labelled and free from leaks</div> |
| Storage incompatibility | ▶ Avoid storage with reducing agents.                                                                                                                        |

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

| Ingredient                        | TEEL-1    | TEEL-2      | TEEL-3      |
|-----------------------------------|-----------|-------------|-------------|
| diurethane dimethacrylate         | 120 mg/m3 | 1,300 mg/m3 | 7,900 mg/m3 |
| triethylene glycol dimethacrylate | 33 mg/m3  | 360 mg/m3   | 2,100 mg/m3 |

| Ingredient                                      | Original IDLH | Revised IDLH  |
|-------------------------------------------------|---------------|---------------|
| diurethane dimethacrylate                       | Not Available | Not Available |
| triethylene glycol dimethacrylate               | Not Available | Not Available |
| 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane | Not Available | Not Available |

Occupational Exposure Banding

| Ingredient                                      | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------------------------------|-----------------------------------|----------------------------------|
| diurethane dimethacrylate                       | E                                 | ≤ 0.1 ppm                        |
| triethylene glycol dimethacrylate               | E                                 | ≤ 0.1 ppm                        |
| 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane | E                                 | ≤ 0.1 ppm                        |

|        |                                                                                                                                                                                                                                                                                                                                                                    |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Notes: | Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health. |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

MATERIAL DATA

Exposure controls

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                  |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| Appropriate engineering controls | <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.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>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.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> |                                  |
|                                  | Type of Contaminant:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Air Speed:                       |
|                                  | solvent, vapours, degreasing etc., evaporating from tank (in still air).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0.25-0.5 m/s<br>(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<br>(500-2000 f/min.)  |
|                                  | Within each range the appropriate value depends on:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                  |
|                                  | Lower end of the range                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Upper end of the range           |
|                                  | 1: Room air currents minimal or favourable to capture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1: Disturbing room air currents  |
|                                  | 2: Contaminants of low toxicity or of nuisance value only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2: Contaminants of high toxicity |
|                                  | 3: Intermittent, low production.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 3: High production, heavy use    |
|                                  | 4: Large hood or large air mass in motion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 4: Small hood-local control only |
|                                  | Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                  |

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|                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                | 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.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Personal protection</b>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Eye and face protection</b> | <p>No special equipment for minor exposure i.e. when handling small quantities.</p> <p>OTHERWISE:</p> <ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</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 Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul> |
| <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>▶ P.V.C apron.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> <li>▶ Eye wash unit.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

### Respiratory protection

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

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Required minimum protection factor | Maximum gas/vapour concentration present in air p.p.m. (by volume) | Half-face Respirator | Full-Face Respirator |
|------------------------------------|--------------------------------------------------------------------|----------------------|----------------------|
| up to 10                           | 1000                                                               | A-AUS / Class1       | -                    |
| up to 50                           | 1000                                                               | -                    | A-AUS / Class 1      |
| up to 50                           | 5000                                                               | Airline *            | -                    |
| up to 100                          | 5000                                                               | -                    | A-2                  |
| up to 100                          | 10000                                                              | -                    | A-3                  |
| 100+                               |                                                                    |                      | Airline**            |

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand

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 with ester-like odour, insoluble in water. |                                                |                |
| <b>Physical state</b>                               | Free-flowing Paste                                                                | <b>Relative density (Water = 1)</b>            | 1.5-2.0        |
| <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> | Gel 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</b>                          | Immiscible                                                                        | <b>pH as a solution (%)</b>                    | Not Available  |
| <b>Vapour density (Air = 1)</b>                     | Not Available                                                                     | <b>VOC g/L</b>                                 | Not Available  |

Continued...

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

## SECTION 10 Stability and reactivity

|                                           |                                                                           |
|-------------------------------------------|---------------------------------------------------------------------------|
| <b>Reactivity</b>                         | See section 7                                                             |
| <b>Chemical stability</b>                 | Product is considered stable and hazardous polymerisation will not occur. |
| <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

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhaled</b>      | Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Ingestion</b>    | 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Skin Contact</b> | Limited 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Eye</b>          | Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Chronic</b>      | 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>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance who are likely to become hyper-responsive.<br>Substances that can cause occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing air-way hyper-responsiveness. The latter substances are not classified as asthmagens or respiratory sensitisers<br>Wherever it is reasonably practicable, exposure to substances that can cause occupational asthma should be prevented. Where this is not possible the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive.<br>Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance. |

|                                                                                                                                              |                                                 |                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------|
| Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2 | <b>TOXICITY</b>                                 | <b>IRRITATION</b>                                                |
|                                                                                                                                              | Not Available                                   | Not Available                                                    |
| diurethane dimethacrylate                                                                                                                    | <b>TOXICITY</b>                                 | <b>IRRITATION</b>                                                |
|                                                                                                                                              | dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>   | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |
|                                                                                                                                              | Oral (Rat) LD50: >2000 mg/kg <sup>[2]</sup>     | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| triethylene glycol dimethacrylate                                                                                                            | <b>TOXICITY</b>                                 | <b>IRRITATION</b>                                                |
|                                                                                                                                              | dermal (mouse) LD50: >2000 mg/kg <sup>[1]</sup> | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |
|                                                                                                                                              | Oral (Mouse) LD50: 10750 mg/kg <sup>[2]</sup>   | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |
| 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane                                                                                              | <b>TOXICITY</b>                                 | <b>IRRITATION</b>                                                |
|                                                                                                                                              | Not Available                                   | 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

|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DIURETHANE DIMETHACRYLATE</b> | * Possible carcinogen; possible sensitizer; possible irreversible effects * Polysciences MSDS The skin sensitising potential of the test substance was investigated in a Local Lymph Node Assay (LLNA) in mice according to OECD Guideline 429 and in compliance with GLP (Vogel, 2009). The highest technically achievable test substance concentration was 50% (w/w) in dimethylformamide. To determine the highest non-irritant test concentration, a pre-test was performed in two animals. Two mice were treated with concentrations of 25 and 50% each on three consecutive days. No signs of irritation or systemic toxicity were observed at the tested concentrations. In the main study, four female CBA/CaOlaHsd mice per test group were |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Continued...

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

treated with the test substance at concentrations of 10, 25 and 50% (w/w) in dimethylformamide or with vehicle alone for three consecutive days by open application on the ears (25 µL/ear). Three days after the last exposure, all animals were injected with 3H-methyl thymidine and approximately after five hours the draining (auricular) lymph nodes were excised and pooled for each test group. After precipitating the DNA of the lymph node cells, radioactivity measurements were performed. Treatment with test substance concentrations of 10, 25 and 50% (w/w) in dimethylformamide resulted in DPM values per lymph node of 1266.3, 1363.5 and 3562.1, respectively. The SI values calculated for the substance concentrations 10, 25 and 50% were 1.58, 1.70 and 4.44, respectively. The EC3 value was calculated to be 36.9%. Based on the results, the test substance was regarded as a skin sensitizer under the conditions of the test. Repeat Dose Toxicity: NOAEL = 100 mg/kg bw/day for males NOAEL = 300 mg/kg bw/day for females The lowest observed adverse effect level (LOAEL) in male animals is 300 mg/kg bw/day. According to Annex I of Regulation (EC) No 1272/2008 classification as STOT RE Category 2 is applicable, when significant toxic effects observed in a 90-day repeated-dose study conducted in experimental animals are seen to occur within the guidance value ranges of  $10 < C = 100$  mg/kg bw/day. These guidance values can be used as a basis to extrapolate equivalent guidance values for toxicity studies of greater or lesser duration, using dose/exposure time extrapolation similar to Habers rule for inhalation, which states essentially that the effective dose is directly proportional to the exposure concentration and the duration of exposure. The assessment shall be done on a case-by-case basis; for a 28-day study the guidance value is increased by a factor of three. The available repeated dose toxicity study was conducted in combination with the reproductive/developmental toxicity screening test. Male animals were exposed to the test substance for 56 days. Thus, the guidance value is increased by a factor of 1.6 leading to a guidance value range of  $16 < C = 160$  mg/kg bw/day for a classification as STOT RE Category 2. The LOAEL of 300 mg/kg bw/day in the present study is above the guidance value for a classification with regard to repeated exposure. Thus, the available data on oral repeated dose toxicity do not meet the criteria for classification according to Regulation (EC) No 1272/2008, and is therefore conclusive but not sufficient for classification. Genetic toxicity: The available data on genetic toxicity are not sufficient for classification according to Regulation (EC) No 1272/2008. Gene mutation in bacteria A bacterial gene mutation assay with the test substance was performed in accordance with OECD Guideline 471 and in compliance with GLP (Paulus, 2009). In two independent experiments, the Salmonella typhimurium strains TA 97a, TA 98, TA 100, TA 102 and TA 1535 were exposed to the test substance dissolved in DMSO using either the preincubation or the plate incorporation method. Test substance concentrations of 50, 150, 500, 1501 and 5004 µg/plate were selected for the plate incorporation test with and without metabolic activation. In the second experiment, 312, 624, 1247, 2493 and 4986 µg/plate were selected for the preincubation method with and without metabolic activation. No signs of cytotoxicity were observed up to and including the limit concentration. Up to 5000 µg/plate, the test substance did not induce an increase in the mutation frequency of the tester strains in the presence and absence of a metabolic activation system. The determined vehicle values for the spontaneous revertants of the controls and all positive control values were within the range of historical data. Under the conditions of this experiment, the test substance did not show mutagenicity in the selected S. typhimurium strains in the presence and absence of metabolic activation. In vitro cytogenetic An in vitro micronucleus assay was performed with the test substance (Schweikl, 2001). In two independent experiments, Chinese hamster lung fibroblasts were exposed to the test substance dissolved in DMSO at concentrations of 11.75, 23.5, 35.25 µg/mL for 24 h in the absence of metabolic activation. Cytotoxicity of the test substance was observed and the TC50 value was assessed to be 24 µg/mL. At cytotoxic concentration levels of the test substance (= 24 µg/mL) the numbers of micronuclei were slightly increased in the absence of metabolic activation. Ethyl methanesulphonate was used as positive control and produced a distinct increase in micronuclei frequency indicating that the test conditions were adequate. Under the conditions of this experiment, the potential of the test substance to induce micronuclei is equivocal. In vitro mutagenicity in mammalian cells An in vitro HPRT assay was performed with the test substance (Schweikl, 1998). In three replicate cultures Chinese hamster lung fibroblasts were exposed to the test substance dissolved in DMSO at concentrations of 11.75, 23.5, 35.25 µg/mL for 24 h in the absence of metabolic activation. Cytotoxicity of the test substance was observed at concentrations = 23.5 µg/mL. No mutagenic activity of UDMA was detected. Ethyl methanesulphonate was used as positive control and produced a distinct increase in mutant frequency indicating that the test conditions were adequate. Thus, under the conditions of this experiment, the test substance did not show mutagenicity in V79 cells without metabolic activation. Due to the positive result in the in vitro micronucleus test without metabolic activation at cytotoxic concentrations a micronucleus test in vivo should be conducted to conclude on genotoxic potential of the test substance. Reproductive toxicity: The available data on toxicity to reproduction do not meet the criteria for classification according to Regulation (EC) 1272/2008, and are therefore conclusive but not sufficient for classification. reproductive toxicity: NOAEL  $\geq$  1000 mg/kg bw/day for males and females of the parental generation systemic toxicity: NOAEL = 100 mg/kg bw/day for males and 300 mg/kg bw/day for females of the parental generation A reliable sub-acute study regarding reproductive/developmental toxicity is available for the test substance. The potential reproductive or developmental toxicity of the test substance was assessed in a sub-acute combined repeated dose toxicity study with the reproductive/developmental toxicity screening test in Hsd.Han: Wistar rats performed according to OECD Guideline 422 and in compliance with GLP. Three groups of 12 male and 12 female rats received the test substance in polyethylene glycol as vehicle at doses of 100, 300 or 600 mg/kg bw/day orally via gavage at concentrations of 0, 25, 75 and 150 mg/mL corresponding to a 4 mL/kg bw dosing volume. A control group of 12 animals/sex received the vehicle only. In addition, 5 animals/sex were added to the control and high dose group to assess the reversibility of any effects observed at the high dose level (recovery group). All animals of the parental generation were dosed prior to mating (14 days) and throughout mating. In addition, males received the test item or vehicle after mating up to the day before necropsy (altogether for 56 days). Females were additionally exposed through the gestation period and up to lactation days 13 - 21, i.e. up to the day before necropsy (altogether for 56, 57 or 64 days). Observations included mortality, clinical signs, body weight, food consumption, mating, pregnancy and delivery process, lactation as well as development of offspring. The dams were allowed to litter, and rear their offspring up to day 13 post-partum. Litters were weighed and offspring were observed for possible abnormalities and were euthanized on post-natal day 13 or shortly thereafter. Blood samples were collected for determination of serum levels of thyroid hormones (T4) from all pups per litter at termination on post-natal day 13. No adverse effect on mortality, clinical signs, body weight or necropsy findings were detected in the offspring terminated as scheduled. Thyroid hormone levels (T4) in pups on post-natal day 13 were not affected. The anogenital distance (male and female) or nipple retention (male) was not affected due to treatment with the test substance. For the parental animals pale livers and histopathological changes in the liver (hepatic lipidosis) were observed at 300 mg/kg bw/day for males and 1000 mg/kg bw/day for females. Thus, under the conditions of this study, the NOAEL of the test substance for systemic toxicity of the parental generation following oral administration via gavage for 56 days is 100 mg/kg bw/day in male Wistar rats. The corresponding NOAEL in female Wistar rats following oral administration via gavage for 56, 57 or 64 days is 300 mg/kg bw/day. The corresponding NOAEL for the offspring is 1000 mg/kg bw/day. \* REACH Dossier

**2,2-BIS[4-(2-METHACRYLOXY)ETHOXY]PHENYL]PROPANE**

No significant acute toxicological data identified in literature search. The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics. Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity. Several derivatives of BPA exhibited significant thyroid hormonal activity towards rat pituitary cell line GH3, which releases growth hormone in a thyroid hormone-dependent manner. However, BPA and several other derivatives did not show such activity. Results suggest that the 4-hydroxyl group of the A-phenyl ring and the B-phenyl ring of BPA derivatives are required for these hormonal activities, and substituents at the 3,5-positions of the phenyl rings and the bridging alkyl moiety markedly influence the activities. Bisphenols promoted cell proliferation and increased the synthesis and secretion of cell type-specific proteins. When ranked by proliferative potency, the longer the alkyl substituent at the bridging carbon, the lower the concentration needed for maximal cell yield; the most active compound contained two propyl chains at the bridging carbon. Bisphenols with two hydroxyl groups in the para position and an angular configuration are suitable for appropriate hydrogen bonding to the

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow,  
LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

|                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                | <p>acceptor site of the oestrogen receptor.</p> <p>In vitro cell models were used to evaluate the ability of 22 bisphenols (BPs) to induce or inhibit estrogenic and androgenic activity. BPA, Bisphenol AF (BPAF), bisphenol Z (BPZ), bisphenol C (BPC), tetramethyl bisphenol A (TMBPA), bisphenol S (BPS), bisphenol E (BPE), 4,4-bisphenol F (4,4-BPF), bisphenol AP (BPAP), bisphenol B (BPB), tetrachlorobisphenol A (TCBPA), and benzylparaben (PHBB) induced estrogen receptor (ER)α and/or ERβ-mediated activity. With the exception of BPS, TCBPA, and PHBB, these same BPs were also androgen receptor (AR) antagonists. Only 3 BPs were found to be ER antagonists. Bisphenol P (BPP) selectively inhibited ERβ-mediated activity and 4-(4-phenylmethoxyphenyl)sulfonylphenol (BPS-MPE) and 2,4-bisphenol S (2,4-BPS) selectively inhibited ERα-mediated activity. None of the BPs induced AR-mediated activity.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>DIURETHANE DIMETHACRYLATE</b>                                                                                               | Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test, oral (OECD 422), rat:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>DIURETHANE DIMETHACRYLATE &amp; TRIETHYLENE GLYCOL DIMETHACRYLATE</b>                                                       | <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>DIURETHANE DIMETHACRYLATE &amp; TRIETHYLENE GLYCOL DIMETHACRYLATE &amp; 2,2-BIS[4-(2-METHACRYLOXY)ETHOXY]PHENYL]PROPANE</b> | <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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>DIURETHANE DIMETHACRYLATE &amp; 2,2-BIS[4-(2-METHACRYLOXY)ETHOXY]PHENYL]PROPANE</b>                                         | <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>Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH<sub>2</sub>=CHCOO or CH<sub>2</sub>=C(CH<sub>3</sub>)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing.</p> <p>This position has now been revised and acrylates and methacrylates are no longer <i>de facto</i> carcinogens.</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 monoarylesters 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> |

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

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

### Toxicity

| Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow, LC Opaquer, Luna Flow, Luna Flow LV, Luna 2 | Endpoint      | Test Duration (hr) | Species                       | Value         | Source        |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|-------------------------------|---------------|---------------|
|                                                                                                                                              | Not Available | Not Available      | Not Available                 | Not Available | Not Available |
| diurethane dimethacrylate                                                                                                                    | Endpoint      | Test Duration (hr) | Species                       | Value         | Source        |
|                                                                                                                                              | NOEC(ECx)     | 72h                | Algae or other aquatic plants | 0.21mg/l      | 2             |
|                                                                                                                                              | LC50          | 96h                | Fish                          | 10.1mg/l      | 2             |
|                                                                                                                                              | EC50          | 72h                | Algae or other aquatic plants | >0.68mg/l     | 2             |
|                                                                                                                                              | EC50          | 48h                | Crustacea                     | >1.2mg/l      | 2             |
| triethylene glycol dimethacrylate                                                                                                            | Endpoint      | Test Duration (hr) | Species                       | Value         | Source        |
|                                                                                                                                              | NOEC(ECx)     | 72h                | Algae or other aquatic plants | 18.6mg/l      | 2             |
|                                                                                                                                              | EC50          | 72h                | Algae or other aquatic plants | 72.8mg/l      | 2             |
|                                                                                                                                              | LC50          | 96h                | Fish                          | 16.4mg/l      | 2             |

Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow,  
LC Opaquer, Luna Flow, Luna Flow LV, Luna 2

| 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane | Endpoint                                                                                                                                                                                                                                                                                                                                                                                  | Test Duration (hr) | Species       | Value         | Source        |
|-------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|---------------|---------------|
|                                                 | Not Available                                                                                                                                                                                                                                                                                                                                                                             | Not Available      | Not Available | Not Available | Not Available |
| Legend:                                         | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - 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 |
|-----------------------------------|-------------------------|------------------|
| triethylene glycol dimethacrylate | LOW                     | LOW              |

Bioaccumulative potential

| Ingredient                        | Bioaccumulation     |
|-----------------------------------|---------------------|
| triethylene glycol dimethacrylate | LOW (LogKOW = 1.88) |

Mobility in soil

| Ingredient                        | Mobility       |
|-----------------------------------|----------------|
| triethylene glycol dimethacrylate | LOW (KOC = 10) |

SECTION 13 Disposal considerations

Waste treatment methods

|                              |                                                                                                        |
|------------------------------|--------------------------------------------------------------------------------------------------------|
| Product / Packaging disposal | Consult State Land Waste Management Authority for disposal.<br>Bury residue in an authorised landfill. |
|------------------------------|--------------------------------------------------------------------------------------------------------|

SECTION 14 Transport information

Labels Required

|                  |    |
|------------------|----|
| Marine Pollutant | NO |
|------------------|----|

Land transport (TDG): 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

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

| Product name                                    | Group         |
|-------------------------------------------------|---------------|
| diurethane dimethacrylate                       | Not Available |
| triethylene glycol dimethacrylate               | Not Available |
| 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane | Not Available |

Transport in bulk in accordance with the ICG Code

| Product name                                    | Ship Type     |
|-------------------------------------------------|---------------|
| diurethane dimethacrylate                       | Not Available |
| triethylene glycol dimethacrylate               | Not Available |
| 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane | Not Available |

SECTION 15 Regulatory information

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

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

diurethane dimethacrylate is found on the following regulatory lists

Canada Non-Domestic Substances List (NDSL)

triethylene glycol dimethacrylate is found on the following regulatory lists

Canada Categorization decisions for all DSL substancesCanada Domestic Substances List (DSL)

2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane is found on the following regulatory lists

Canada Categorization decisions for all DSL substancesCanada Domestic Substances List (DSL)

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow,  
LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

**National Inventory Status**

| National Inventory                              | Status                                                                                                                                                                                            |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AIIC / Australia Non-Industrial Use | Yes                                                                                                                                                                                               |
| Canada - DSL                                    | No (diurethane dimethacrylate)                                                                                                                                                                    |
| Canada - NDSL                                   | No (triethylene glycol dimethacrylate; 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane)                                                                                                           |
| China - IECSC                                   | Yes                                                                                                                                                                                               |
| Europe - EINEC / ELINCS / NLP                   | Yes                                                                                                                                                                                               |
| Japan - ENCS                                    | No (diurethane dimethacrylate)                                                                                                                                                                    |
| Korea - KECI                                    | Yes                                                                                                                                                                                               |
| New Zealand - NZIoC                             | Yes                                                                                                                                                                                               |
| Philippines - PICCS                             | Yes                                                                                                                                                                                               |
| USA - TSCA                                      | Yes                                                                                                                                                                                               |
| Taiwan - TCSI                                   | Yes                                                                                                                                                                                               |
| Mexico - INSQ                                   | No (diurethane dimethacrylate)                                                                                                                                                                    |
| Vietnam - NCI                                   | Yes                                                                                                                                                                                               |
| Russia - FBEPH                                  | No (diurethane dimethacrylate; 2,2-bis[4-(2-methacryloxy)ethoxy]phenyl]propane)                                                                                                                   |
| <b>Legend:</b>                                  | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

**SECTION 16 Other information**

|                      |            |
|----------------------|------------|
| <b>Revision Date</b> | 10/12/2021 |
| <b>Initial Date</b>  | 02/11/2015 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated                                                      |
|---------|----------------|-----------------------------------------------------------------------|
| 9.1     | 20/08/2021     | Classification change due to full database hazard calculation/update. |
| 10.1    | 10/12/2021     | Classification change due to full database hazard calculation/update. |

**Other information**

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  
 ES: Exposure Standard  
 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  
 AIIC: Australian Inventory of Industrial Chemicals  
 DSL: Domestic Substances List  
 NDSL: Non-Domestic Substances List  
 IECSC: Inventory of Existing Chemical Substance in China  
 EINECS: European INventory of Existing Commercial chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 NLP: No-Longer Polymers  
 ENCS: Existing and New Chemical Substances Inventory  
 KECI: Korea Existing Chemicals Inventory  
 NZIoC: New Zealand Inventory of Chemicals  
 PICCS: Philippine Inventory of Chemicals and Chemical Substances  
 TSCA: Toxic Substances Control Act  
 TCSI: Taiwan Chemical Substance Inventory  
 INSQ: Inventario Nacional de Sustancias Químicas  
 NCI: National Chemical Inventory  
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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:**

Continued...

**Glacier, Wave, Wave MV, Wave HV, ROK, ICE, Luna, Aura, Aura Bulk Fill, Aura eASY, Aura Easyflow,  
LC Opaquer, Luna Flow, Luna Flow LV, Luna 2**

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