

# M-Bond Curing Agent 600-610

## Vishay Measurements Group GmbH

Version No: 5.0

Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Initial Date: **02/10/2026**

Revision Date: **02/18/2026**

Print Date: **02/25/2026**

S.REACH.GB.EN

### SECTION 1 Identification of the substance / mixture and of the company / undertaking

#### 1.1. Product Identifier

Product name	M-Bond Curing Agent 600-610
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa) (contains pyromellitic dianhydride and tetrahydrofuran)
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Relevant identified uses	Adhesive.
Uses advised against	No specific uses advised against are identified.

#### 1.3. Details of the manufacturer or importer of the safety data sheet

Manufacturer/Supplier	Vishay Measurements Group GmbH
Address	Tatschenweg 1 Heilbronn 74078 Germany
Telephone	+49 (0) 7131 39099-0
Fax	+49 (0) 7131 39099-229
Website	<a href="http://www.VPGSensors.com">www.VPGSensors.com</a>
Email	mm.de@vpgsensors.com

#### 1.4. Emergency telephone number

Association / Organisation	Chemtrec (24/7/365)
Emergency telephone number(s)	(00-1) 703-527-3887 (Worldwide)
Other emergency telephone number(s)	Not Available

### SECTION 2 Hazards identification

#### 2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]	H225 - Flammable Liquids Category 2, H302 - Acute Toxicity (Oral) Category 4, H317 - Sensitisation (Skin) Category 1, H318 - Serious Eye Damage/Eye Irritation Category 1, H334 - Sensitisation (Respiratory) Category 1, H335 - Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H336 - Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H351 - Carcinogenicity Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

#### 2.2. Label elements

Hazard pictogram(s)	
Signal word	<b>Danger</b>

#### Hazard statement(s)

## M-Bond Curing Agent 600-610

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

### Supplementary statement(s)

Not Applicable

### Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P202	Do not handle until all safety precautions have been read and understood.
P272	Contaminated work clothing should not be allowed out of the workplace.

### Precautionary statement(s) Response

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P302+P352	IF ON SKIN: Wash with plenty of water.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.

### Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

### Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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Material contains tetrahydrofuran, pyromellitic dianhydride.

### 2.3. Other hazards

Inhalation and/or skin contact may produce health damage\*.

Cumulative effects may result following exposure\*.

May be harmful to the foetus/ embryo\*.

\*LIMITED EVIDENCE

<b>tetrahydrofuran</b>	Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
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This substance/mixture does not meet the criteria for classification as Persistent, Bioaccumulative, and Toxic (PBT) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as very Persistent and very Bioaccumulative (vPvB) in accordance with Annex XIII, Commission Delegated Regulation (EU) 2017/2100, and Commission Regulation (EU) 2018/605.

This substance/mixture does not meet the criteria for classification as Persistent, Mobile and Toxic (PMT) in accordance with Commission Delegated Regulation (EU) 2023/707.

This substance/mixture does not meet the criteria for classification as very Persistent and very Mobile (vPvM) in accordance with Commission Delegated Regulation (EU) 2023/707.

The substance/mixture does not contain components considered to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, nor is it included in the list established under REACH Article 59(1), at concentrations equal to or greater than 0.1% (w/w).

No further product hazard information.

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### SECTION 3 Composition / information on ingredients

#### 3.1. Substances

See 'Composition on ingredients' in Section 3.2

#### 3.2. Mixtures

1. CAS No 2. EC No 3. Index No 4. REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 109-99-9 2. 203-726-8 3. 603-025-00-0 4. Not Available	25-95	<u>tetrahydrofuran</u> *	Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Carcinogenicity Category 2; H225, H319, H335, H351 [2]	STOT SE 3; H335: C ≥25 %   Eye Irrit. 2; H319: C ≥ 25 % Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not Available
1. 89-32-7 2. 201-898-9 3. 607-098-00-X 4. Not Available	5-25	<u>pyromellitic dianhydride</u>	Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Sensitisation (Respiratory) Category 1; H317, H318, H334 [2]	SCL: Not Available Acute M factor: Not Applicable Chronic M factor: Not Applicable	Not Available
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

### SECTION 4 First aid measures

#### 4.1. 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>▶ Immediately hold eyelids apart and flush the eye continuously with 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>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li> <li>▶ Transport to hospital or doctor without delay.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

#### 4.2. Most important symptoms and effects, both acute and delayed

See Section 11

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

Treat symptomatically.

### SECTION 5 Firefighting measures

#### 5.1. Extinguishing media

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

#### 5.2. Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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#### 5.3. Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Consider evacuation (or protect in place).</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 approach containers suspected to be hot.</b></li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> </ul>
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	<ul style="list-style-type: none"> <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>▶ Liquid and vapour are highly flammable.</li> <li>▶ Severe fire hazard when exposed to heat, flame and/or oxidisers.</li> <li>▶ Vapour may travel a considerable distance to source of ignition.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> </ul> <p>Combustion products include:</p> <ul style="list-style-type: none"> <li>▶ carbon dioxide (CO<sub>2</sub>)</li> <li>▶ other pyrolysis products typical of burning organic material.</li> </ul> <p><b>WARNING:</b> Long standing in contact with air and light may result in the formation of potentially explosive peroxides.</p>

### SECTION 6 Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

See section 8

#### 6.2. Environmental precautions

See section 12

#### 6.3. Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb small quantities with vermiculite or other absorbent material.</li> <li>▶ Wipe up.</li> <li>▶ Collect residues in a flammable waste container.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ May be violently or explosively reactive.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Consider evacuation (or protect in place).</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Water spray or fog may be used to disperse /absorb vapour.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Use only spark-free shovels and explosion proof equipment.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite.</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

#### 6.4. Reference to other sections

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

### SECTION 7 Handling and storage

#### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Ensure operatives are trained to minimize exposures.</li> <li>▶ Obtain special instructions before use.</li> <li>▶ Do not handle until all safety precautions have been read and understood.</li> <li>▶ Avoid all contact.</li> <li>▶ Avoid breathing vapors.</li> <li>▶ Ensure adequate ventilation.</li> <li>▶ Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.</li> <li>▶ No smoking.</li> <li>▶ May form explosive peroxides.</li> <li>▶ Take precautionary measures against static discharges.</li> <li>▶ Use personal protective equipment as required.</li> <li>▶ Do not eat, drink or smoke when using this product.</li> <li>▶ Wash hands before breaks and after work.</li> </ul>
<b>Fire and explosion protection</b>	See section 5

#### 7.2. Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Ground/bond container and receiving equipment.</li> <li>▶ Keep only in original container.</li> <li>▶ Store in a well-ventilated place.</li> <li>▶ Keep container tightly closed.</li> <li>▶ Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.</li> <li>▶ No smoking.</li> <li>▶ May form explosive peroxides.</li> <li>▶ Keep away from direct sunlight.</li> </ul>
<b>Storage incompatibility</b>	Storage temperature - Ambient. Keep at temperature not exceeding (°C): 32 Incompatible materials - Stable under normal conditions.
<b>Hazard categories in accordance with Regulation</b>	P5a: Flammable Liquids, P5b: Flammable Liquids, P5c: Flammable Liquids

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<b>(EC) No 2012/18/EU (Seveso III)</b>	
<b>Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of</b>	P5a Lower- / Upper-tier requirements: 10 / 50 P5b Lower- / Upper-tier requirements: 50 / 200 P5c Lower- / Upper-tier requirements: 5 000 / 50 000

### 7.3. Specific end use(s)

See section 1.2

## SECTION 8 Exposure controls / personal protection

### 8.1. Control parameters

Ingredient	DNELs	PNECs
	Exposure Pattern Worker	Compartment
tetrahydrofuran	Dermal 12.6 mg/kg bw/day (Systemic, Chronic) Inhalation 72.4 mg/m <sup>3</sup> (Systemic, Chronic) Inhalation 150 mg/m <sup>3</sup> (Local, Chronic) Inhalation 96 mg/m <sup>3</sup> (Systemic, Acute) Inhalation 300 mg/m <sup>3</sup> (Local, Acute) Dermal 1.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 13 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 1.5 mg/kg bw/day (Systemic, Chronic) * Inhalation 75 mg/m <sup>3</sup> (Local, Chronic) * Inhalation 52 mg/m <sup>3</sup> (Systemic, Acute) * Inhalation 150 mg/m <sup>3</sup> (Local, Acute) *	4.32 mg/L (Water (Fresh)) 21.6 mg/L (Water - Intermittent release) 0.432 mg/L (Water (Marine)) 23.3 mg/kg sediment dw (Sediment (Fresh Water)) 2.33 mg/kg sediment dw (Sediment (Marine)) 2.13 mg/kg soil dw (Soil) 4.6 mg/L (STP) 67 mg/kg food (Oral)
pyromellitic dianhydride	Dermal 10 mg/kg bw/day (Systemic, Chronic) Inhalation 70.4 mg/m <sup>3</sup> (Systemic, Chronic) Dermal 5 mg/kg bw/day (Systemic, Chronic) * Inhalation 17.4 mg/m <sup>3</sup> (Systemic, Chronic) * Oral 5 mg/kg bw/day (Systemic, Chronic) *	1 mg/L (Water (Fresh)) 0.63 mg/L (Water - Intermittent release) 0.1 mg/L (Water (Marine)) 3.7 mg/kg sediment dw (Sediment (Fresh Water)) 0.37 mg/kg sediment dw (Sediment (Marine)) 0.153 mg/kg soil dw (Soil) 23 mg/L (STP)

\* Values for General Population

### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	tetrahydrofuran	Tetrahydrofuran	50 ppm / 150 mg/m <sup>3</sup>	300 mg/m <sup>3</sup> / 100 ppm	Not Available	Sk

### 8.2. Exposure controls

<b>8.2.1. Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. 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>For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.</p> <p>Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;">Type of Contaminant:</th> <th style="width: 20%;">Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td> <td>0.25-0.5 m/s (50-100 f/min.)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Lower end of the range</th> <th style="width: 50%;">Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p> <p>Adequate ventilation is typically taken to be that which limits the average concentration to no more than 25% of the LEL within the building, room or enclosure containing the dangerous substance.</p>	Type of Contaminant:	Air Speed:	solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	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
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	<ul style="list-style-type: none"> <li>· Ventilation for plant and machinery is normally considered adequate if it limits the average concentration of any dangerous substance that might potentially be present to no more than 25% of the LEL. However, an increase up to a maximum 50% LEL can be acceptable where additional safeguards are provided to prevent the formation of a hazardous explosive atmosphere. For example, gas detectors linked to emergency shutdown of the process might be used together with maintaining or increasing the exhaust ventilation on solvent evaporating ovens and gas turbine enclosures.</li> <li>· Temporary exhaust ventilation systems may be provided for non-routine higher-risk activities, such as cleaning, repair or maintenance in tanks or other confined spaces or in an emergency after a release. The work procedures for such activities should be carefully considered.. The atmosphere should be continuously monitored to ensure that ventilation is adequate and the area remains safe. Where workers will enter the space, the ventilation should ensure that the concentration of the dangerous substance does not exceed 10% of the LEL (irrespective of the provision of suitable breathing apparatus)</li> </ul>
<p><b>8.2.2. Individual protection measures, such as personal protective equipment</b></p>	
<p><b>Eye and face protection</b></p>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields.</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</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].</li> </ul>
<p><b>Skin protection</b></p>	<p>See Hand protection below</p>
<p><b>Hands/feet protection</b></p>	<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> </ul> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>· Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> <li>· Good when breakthrough time &gt; 20 min</li> <li>· Fair when breakthrough time &lt; 20 min</li> <li>· Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p>
<p><b>Body protection</b></p>	<p>See Other protection below</p>
<p><b>Other protection</b></p>	<ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ PVC Apron.</li> <li>▶ PVC protective suit may be required if exposure severe.</li> <li>▶ Eyewash unit.</li> <li>▶ Ensure there is ready access to a safety shower.</li> <li>▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.</li> <li>▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).</li> <li>▶ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.</li> </ul>

**Recommended material(s)****GLOVE SELECTION INDEX**

Glove selection is based on a modified presentation of the: "Forsberg Clothing Performance Index".

**Respiratory protection**

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

## M-Bond Curing Agent 600-610

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

M-Bond Curing Agent 600-610

Material	CPI
PE/EVAL/PE	A
PVA	B
TEFLON	B
BUTYL	C
CPE	C
NEOPRENE	C
VITON/CHLOROBUTYL	C

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

**NOTE:** As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

\* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

### Ansell Glove Selection

Glove — In order of recommendation
AlphaTec® 15-554
AlphaTec® 38-612
AlphaTec® 53-001
AlphaTec® 58-005
MICROFLEX® MidKnight® XTRA 93-862
MICROFLEX® LifeStar EC™ 93-868
AlphaTec® Solvex® 37-175
BioClean™ Emerald BENS
BioClean™ Extra BLAS
BioClean™ Fusion (Sterile) S-BFAP

The suggested gloves for use should be confirmed with the glove supplier.

### 8.2.3. Environmental exposure controls

See section 12

## SECTION 9 Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Appearance	Almost colourless to pale yellow / Amber Liquid		
Physical state	Liquid	Relative density (Water = 1)	0.9
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Ether-like	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	66	Molecular weight (g/mol)	Not Available
Flash point (°C)	-14	Taste	Not Available
Evaporation rate	>1 BuAC = 1	Explosive properties	Not explosive. May form explosive peroxides.
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not oxidizing.
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	19.33	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	2.5	VOC g/L	705
Heat of Combustion (kJ/g)	Not Available	Ignition Distance (cm)	Not Available
Flame Height (cm)	Not Available	Flame Duration (s)	Not Available
Enclosed Space Ignition Time Equivalent (s/m3)	Not Available	Enclosed Space Ignition Deflagration Density (g/m3)	Not Available

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

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

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 5 x ES	A-AUS / Class 1	-	A-PAPR-AUS / Class 1
up to 25 x ES	Air-line*	A-2	A-PAPR-2
up to 50 x ES	-	A-3	-
50+ x ES	-	Air-line**	-

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## M-Bond Curing Agent 600-610

<b>Nanoform Solubility</b>	Not Available	<b>Nanoform Particle Characteristics</b>	Not Available
<b>Particle Size</b>	Not Available		

**9.2. Other information**

Not Available

**SECTION 10 Stability and reactivity**

<b>10.1.Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	Presence of a stabilising inhibitor prevents/retards peroxide formation. <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

**SECTION 11 Toxicological information****11.1. Information on toxicological effects**

<b>a) Acute Toxicity</b>	There is sufficient evidence to classify this material as acutely toxic.
<b>b) Skin Irritation/Corrosion</b>	Based on available data, the classification criteria are not met.
<b>c) Serious Eye Damage/Irritation</b>	There is sufficient evidence to classify this material as eye damaging or irritating
<b>d) Respiratory or Skin sensitisation</b>	There is sufficient evidence to classify this material as sensitising to skin or the respiratory system
<b>e) Mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>f) Carcinogenicity</b>	There is sufficient evidence to classify this material as carcinogenic
<b>g) Reproductivity</b>	Based on available data, the classification criteria are not met.
<b>h) STOT - Single Exposure</b>	There is sufficient evidence to classify this material as toxic to specific organs through single exposure
<b>i) STOT - Repeated Exposure</b>	Based on available data, the classification criteria are not met.
<b>j) Aspiration Hazard</b>	Based on available data, the classification criteria are not met.

<b>Inhaled</b>	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Overexposure to tetrahydrofuran by inhalation may result in irritation of the mucous membrane, and may produce coughing, chest pains, nausea, dizziness, headache and stupor. High concentrations affect the central nervous system.
<b>Ingestion</b>	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum. Ingestion of tetrahydrofuran may not, in itself, produce internal injury, however, contaminating levels of furan, present in certain grades of commercial product, may produce liver and kidney injury exacerbated by the intake of alcoholic beverages. Accidental ingestion of the material may be damaging to the health of the individual.
<b>Skin Contact</b>	Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Skin contact with tetrahydrofuran may produce smarting and reddening of the skin and after prolonged exposures; skin inflammation may result because the substance removes skin oils (has a degreasing effect). The material may cause severe inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.
<b>Eye</b>	If applied to the eyes, this material causes severe eye damage. Application of a 20% solution of tetrahydrofuran in water in animals to the eye, produced irritation.
<b>Chronic</b>	Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility. Cyclic ethers can cause cancers, especially of the liver. Repeated exposure to tetrahydrofuran (THF) and related compounds has been associated with liver inflammation and fatty degeneration of the liver. Animal testing suggests that this group of compounds can cause liver damage, irritation of the skin and airway, metabolic imbalance, gynaecological disturbance, damage to the adrenal glands and may increase the rate of cancer.

<b>M-Bond Curing Agent 600-610</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available

## M-Bond Curing Agent 600-610

tetrahydrofuran	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
	Inhalation (Rat) LC50: 45 mg/4h <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (Rat) LD50: 2816 mg/kg <sup>[2]</sup>	
pyromellitic dianhydride	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye (Rodent - rabbit): 50mg - Severe
	Oral (Rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye: adverse effect observed (irreversible damage) <sup>[1]</sup>
		Skin (Rodent - rabbit): 50%/2D (intermittent)
		Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
<b>Legend:</b>	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>TETRAHYDROFURAN</b>	Oral (human) LDLo: 50 mg/kg* [CCINFO]* Nil reported The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.		
<b>M-Bond Curing Agent 600-610 &amp; PYROMELLITIC DIANHYDRIDE</b>	Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. The following information refers to contact allergens as a group and may not be specific to this product. 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. For cyclic anhydrides: Low molecular weight carboxylic acid anhydrides are recognized to have similar toxicological properties. Of the well-studied anhydrides, phthalic anhydride (PA) is the most structurally similar to the cyclic anhydrides. Toxicological analogy will be made to phthalic anhydride. Acute toxicity: Available data indicates that the cyclic anhydrides have low acute toxicity, irritate and sensitise the airway and skin, and can cause corrosive eye damage. They can cause sensitization even at low concentrations, and exposures in the workplace need to be controlled to lowest possible levels. Repeat dose toxicity: Animal testing suggests that repeated exposure by mouth caused little clinical effect but did irritate the stomach. Changes in the lipid profile were noted. Sensitisation: Specific serum IgE and IgG antibodies to a fairly large number of anhydrides have been found in exposed workers. Documentation for sensitization was available for all anhydrides within the group, with the exception of NMA; however NMA is also expected to cause sensitization based on analogy with other acid anhydrides. PA and cyclic anhydrides have been associated with occupational (workplace- asthma). Similarly, there is cross-sensitisation potential within this group of substances. Reproductive/Developmental Toxicity: Animal testing has not shown methyltetrahydrophthalic anhydride (MTHPA) to cause reproductive or developmental toxicity, however, limited studies on other carboxylic acid anhydrides (PA) raise the question of possible reproductive toxicity concerns.		
<b>TETRAHYDROFURAN &amp; PYROMELLITIC DIANHYDRIDE</b>	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. 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. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.		
<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	✓
<b>Skin Irritation/Corrosion</b>	✗	<b>Reproductivity</b>	✗
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	✓
<b>Respiratory or Skin sensitisation</b>	✓	<b>STOT - Repeated Exposure</b>	✗
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗

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

## 11.2 Information on other hazards

## 11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

## 11.2.2. Other information

See Section 11.1

## SECTION 12 Ecological information

## M-Bond Curing Agent 600-610

## 12.1. Toxicity

M-Bond Curing Agent 600-610	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

  

tetrahydrofuran	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	24h	Fish	>=5mg/l	1
LC50	96h	Fish	1970-2360mg/L	4	

  

pyromellitic dianhydride	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	7.9mg/l	2
	EC50	48h	Crustacea	63mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	6.25mg/l	2
LC50	96h	Fish	>100mg/l	2	

  

<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. US EPA, Ecotox database - Aquatic Toxicity Data 4. ECETOC Aquatic Hazard Assessment Data 5. NITE (Japan) - Bioconcentration Data 6. METI (Japan) - Bioconcentration Data 7. Vendor Data
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## For Cyclic Anhydrides:

**Environmental Fate:** All members of this group have relatively high boiling points and low vapor concentrations under ambient conditions. Hydrolyzation will occur in water to produce the corresponding diacid indicating that solubility of the hydrolysis products, and resultant pH, is expected to be relevant in the assessment of potential toxicity. Cyclic anhydrides would not be expected to bioconcentrate in aquatic organisms, adsorb to sediments, or evaporate if released into water, based on the behavior of phthalic anhydride (PA), which is closely related.

**Terrestrial Fate:** These chemicals are expected to hydrolyze in moist soils rather than adsorb and direct photolysis occurs.

**Biodegradation:** Methylhexahydrophthalic anhydride (MHHPA) and tetrahydrophthalic anhydride (THPA) show no evidence of biodegradation potential; however, nadic methyl anhydride (NMA) shows 10% biodegradation as measured by total organic carbon (TOC). Hexahydrophthalic anhydride (HHPA) also exhibits slight biodegradation potential (0.6%). All four cyclic anhydrides can hydrolyze to their respective corresponding acids.

**Atmospheric Fate:** Hydrolysis is expected to be a major fate process. The vapor-phase half-life of PA in the atmosphere is approximately 32 days. HHPA has an even shorter atmospheric half-life of about 7 days.

**Aquatic Fate:** Cyclic anhydrides are not expected to bioconcentrate in aquatic organisms, adsorb to sediments, or evaporate if released into water and hydrolysis is expected to be a major fate process.

**Ecotoxicity:** MHHPA, HHPA and THPA are slightly to relatively non-toxic to fish. THPA and HHPA are moderately toxic to ricefish, Daphnia magna water fleas and algae. These chemicals exhibit a low order of ecotoxicity and are in agreement with similar studies indicating that phthalic anhydride also has a low order of ecotoxicity.

**For Tetrahydrofuran (THF):** Koc: 23 and 18; Henry's Law Constant: 7.1X10<sup>-5</sup> atm-m<sup>3</sup>/mole; Vapor pressure: 162 mm Hg at 25 deg C.

**Atmospheric Fate:** Tetrahydrofuran exists only as a vapor in the ambient atmosphere. Vapor-phase tetrahydrofuran will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl and nitrate radicals; the half-life for these reactions in air is about 1 and 3 days, respectively. Tetrahydrofuran is moderately reactive in photochemical smog conditions where nitrogen oxides are present; reactions occur in hours under these conditions. Acrolein and formaldehyde have been reported as reaction products.

**Terrestrial Fate:** Tetrahydrofuran is expected to have very high mobility in soil. Volatilization from moist soil surfaces is expected to be an important fate process. Tetrahydrofuran may also volatilize from dry soil surfaces. Tetrahydrofuran added to surface soil had an abiotic half-life of 5.7 days. Tetrahydrofuran is expected to biodegrade under aerobic conditions but may be resistant to biodegradation in anaerobic environments.

**Aquatic Fate:** Tetrahydrofuran is slightly persistent in water with a half-life of between 2 to 20 days. If tetrahydrofuran should contact the water table, aquifer or navigable waterway, time is of the essence. It is highly soluble in water and total remediation may not be possible. A comprehensive emergency response or disaster preparedness / recovery plan should be in place prior to use. Volatilization from water surfaces is expected to be an important fate process. Hydrolysis is not expected to occur. Tetrahydrofuran is not expected to adsorb to suspended solids and sediment.

**Ecotoxicity:** The potential for bioaccumulation of THF in aquatic organisms is considered to be low and it is not expected to bioaccumulate in aquatic organisms. The concentration of tetrahydrofuran in edible fish tissue is expected to be negligible as compared to the levels found in the water from which the fish were taken. Acute short term toxic environmental effects of THF may include the death of animals, birds, fish and death or low growth rate in plants. Acute effects are seen 2 to 4 days after animals or plants are exposed to tetrahydrofuran. Chronic toxic effects include shortened life span, reproductive problems, lowered fertility, and changes in appearance or behavior in exposed animals. These effects have been seen long after the first exposure(s).

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

## 12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
tetrahydrofuran	LOW	LOW
pyromellitic dianhydride	HIGH	HIGH

## 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
tetrahydrofuran	LOW (LogKOW = 0.46)
pyromellitic dianhydride	LOW (LogKOW = 2.14)

## 12.4. Mobility in soil

Ingredient	Mobility
tetrahydrofuran	LOW (Log KOC = 4.881)
pyromellitic dianhydride	LOW (Log KOC = 178.4)

## 12.5. Results of PBT and vPvB assessment

	P	B	T	PBT criteria fulfilled?	vP	vB	vPvB criteria fulfilled?
M-Bond Curing Agent 600-610				No			No
tetrahydrofuran	No data available	No data available	No data available	No	No data available	No data available	No
pyromellitic dianhydride	No data available	No data available	No data available	No	No data available	No data available	No

## M-Bond Curing Agent 600-610

### 12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

### 12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

## SECTION 13 Disposal considerations

### 13.1. Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Containers may still present a chemical hazard/ danger when empty.</li> <li>▶ Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> </ul> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> <li>▶ Reduction</li> <li>▶ Reuse</li> <li>▶ Recycling</li> <li>▶ Disposal (if all else fails)</li> </ul> <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.</p> <ul style="list-style-type: none"> <li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).</li> <li>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

## SECTION 14 Transport information

### Labels Required

	
<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	●3YE

### Land transport (ADR-RID)

14.1. UN number or ID number	1133														
14.2. UN proper shipping name	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa) (contains pyromellitic dianhydride and tetrahydrofuran)														
14.3. Transport hazard class(es)	<table border="1" style="width: 100%;"> <tr> <td>Class</td> <td>3</td> </tr> <tr> <td>Subsidiary Hazard</td> <td>Not Applicable</td> </tr> </table>	Class	3	Subsidiary Hazard	Not Applicable										
Class	3														
Subsidiary Hazard	Not Applicable														
14.4. Packing group	II														
14.5. Environmental hazard	Not Applicable														
14.6. Special precautions for user	<table border="1" style="width: 100%;"> <tr> <td>Hazard identification (Kemler)</td> <td>33</td> </tr> <tr> <td>Classification code</td> <td>F1</td> </tr> <tr> <td>Hazard Label</td> <td>3</td> </tr> <tr> <td>Special provisions</td> <td>640C</td> </tr> <tr> <td>Limited quantity</td> <td>5 L</td> </tr> <tr> <td>Transport Category</td> <td>2</td> </tr> <tr> <td>Tunnel Restriction Code</td> <td>D/E</td> </tr> </table>	Hazard identification (Kemler)	33	Classification code	F1	Hazard Label	3	Special provisions	640C	Limited quantity	5 L	Transport Category	2	Tunnel Restriction Code	D/E
Hazard identification (Kemler)	33														
Classification code	F1														
Hazard Label	3														
Special provisions	640C														
Limited quantity	5 L														
Transport Category	2														
Tunnel Restriction Code	D/E														

### Air transport (ICAO-IATA / DGR)

14.1. UN number	1133		
14.2. UN proper shipping name	Adhesives containing flammable liquid (contains pyromellitic dianhydride and tetrahydrofuran)		
14.3. Transport hazard class(es)	<table border="1" style="width: 100%;"> <tr> <td>ICAO/IATA Class</td> <td>3</td> </tr> </table>	ICAO/IATA Class	3
ICAO/IATA Class	3		

## M-Bond Curing Agent 600-610

	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	3L
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	A3
	Cargo Only Packing Instructions	364
	Cargo Only Maximum Qty / Pack	60 L
	Passenger and Cargo Packing Instructions	353
	Passenger and Cargo Maximum Qty / Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y341
	Passenger and Cargo Limited Maximum Qty / Pack	1 L

## Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1133	
14.2. UN proper shipping name	ADHESIVES containing flammable liquid (contains pyromellitic dianhydride and tetrahydrofuran)	
14.3. Transport hazard class(es)	IMDG Class	3
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	F-E, S-D
	Special provisions	Not Applicable
	Limited Quantities	5 L

## Inland waterways transport (ADN)

14.1. UN number	1133	
14.2. UN proper shipping name	ADHESIVES containing flammable liquid (vapour pressure at 50 °C more than 110 kPa) (contains pyromellitic dianhydride and tetrahydrofuran)	
14.3. Transport hazard class(es)	3	Not Applicable
14.4. Packing group	II	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Classification code	F1
	Special provisions	640C
	Limited quantity	5 L
	Equipment required	PP, EX, A
	Fire cones number	1

## 14.7. Maritime transport in bulk according to IMO instruments

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

Not Applicable

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

Product name	Group
tetrahydrofuran	Not Applicable
pyromellitic dianhydride	Not Applicable

## 14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
tetrahydrofuran	Not Applicable
pyromellitic dianhydride	Not Applicable

## SECTION 15 Regulatory information

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

## tetrahydrofuran is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

Great Britain GB mandatory classification and labelling list (GB MCL List)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans

UK Workplace Exposure Limits (WELs).

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## pyromellitic dianhydride is found on the following regulatory lists

Great Britain GB mandatory classification and labelling list (GB MCL List)

## Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

## Information according to 2012/18/EU (Seveso III):

Seveso Category	P5a, P5b, P5c

## 15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## National Inventory Status

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (tetrahydrofuran; pyromellitic dianhydride)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	All chemical substances in this product have been designated as TSCA Inventory 'Active'
Taiwan - TCSI	Yes
Mexico - INSQ	No (pyromellitic dianhydride)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
UAE - Control List (Banned/Restricted Substances)	No (tetrahydrofuran; pyromellitic dianhydride)
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory 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

Revision Date	02/18/2026
Initial Date	02/10/2026

## Full text Risk and Hazard codes

H319	Causes serious eye irritation.
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## SDS Version Summary

Version	Date of Update	Sections Updated
5.0	02/17/2026	Hazards identification - Classification, Composition / information on ingredients - Ingredients

## Other information

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.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

## Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Flammable Liquids Category 2, H225	On basis of test data
Acute Toxicity (Oral) Category 4, H302	Expert judgement
Sensitisation (Skin) Category 1, H317	Calculation method
Serious Eye Damage/Eye	Calculation method

**M-Bond Curing Agent 600-610**

<b>Classification according to regulation (EC) No 1272/2008 [CLP] and amendments</b>	<b>Classification Procedure</b>
Irritation Category 1, H318	
Sensitisation (Respiratory) Category 1, H334	Calculation method
Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, H335	Expert judgement
Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, H336	Expert judgement
Carcinogenicity Category 2, H351	Expert judgement

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