

Safety Data Sheet



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

1.1. Product Identifier

| | |
|-------------------------------|---------------------------------|
| Product name | MC002958 - White |
| Synonyms | MC002958 |
| Proper shipping name | PAINT or PAINT RELATED MATERIAL |
| Other means of identification | Not Available |

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

| | |
|--------------------------|---|
| Relevant identified uses | Protective coating for printed circuit boards |
| Uses advised against | Not Applicable |

1.3. Details of the supplier of the safety data sheet

| | | |
|-------------------------|----------------------------------|--|
| Registered company name | Premier Farnell plc | MG Chemicals (Head office) |
| Address | 150 Armley Road, Leeds, LS12 2QQ | 9347 - 193 Street Surrey V4N 4E7 British Columbia Canada |
| Telephone | +44 (0) 870 129 8608 | +(1) 800-201-8822 |
| Fax | - | +(1) 800-708-9888 |
| Email | - | Info@mgchemicals.com |

1.4. Emergency telephone number

| | | |
|-----------------------------------|----------------------------------|---------------|
| Association / Organisation | Premier Farnell plc | Not Available |
| Emergency telephone numbers | 150 Armley Road, Leeds, LS12 2QQ | Not Available |
| Other emergency telephone numbers | +44 1865 407333 | Not Available |

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

| | |
|--|---|
| Classification according to regulation (EC) No 1272/2008 [CLP] [1] | H317 - Skin Sensitizer Category 1B, H319 - Eye Irritation Category 2, H336 - Specific target organ toxicity - single exposure Category 3 (narcotic effects), H225 - Flammable Liquid Category 2 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI |

2.2. Label elements

| | |
|---------------------|---------------|
| Hazard pictogram(s) | |
| SIGNAL WORD | DANGER |

Hazard statement(s)

| | |
|------|--------------------------------------|
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H336 | May cause drowsiness or dizziness. |

Safety Data Sheet



H225 Highly flammable liquid and vapour.

Supplementary statement(s)

EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statement(s) Prevention

| | |
|------|--|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P271 | Use only outdoors or in a well-ventilated area. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P240 | Ground/bond container and receiving equipment. |
| P241 | Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment. |
| P242 | Use only non-sparking tools. |
| P243 | Take precautionary measures against static discharge. |
| P261 | Avoid breathing mist/vapours/spray. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

Precautionary statement(s) Response

| | |
|----------------|--|
| 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 and soap. |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P312 | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P337+P313 | If eye irritation persists: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |

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 in accordance with local regulations. |
|------|---|

2.3. Other hazards

Cumulative effects may result following exposure*.

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

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 | Classification according to regulation (EC) No 1272/2008 [CLP] |
|--|-----------|------------------------|---|
| 1.123-86-4 2.204-658-1 3.607-025-00-1 4.01-2119485493-29-XXXX | 54 | <u>n-butyl acetate</u> | Flammable Liquid Category 3, Specific target organ toxicity - single exposure Category 3 (narcotic effects); H226, H336, EUH066 [3] |

Safety Data Sheet



| | | | |
|--|-----|--|---|
| 1.78-93-3 2.201-159-0 3.606-002-00-3 4.01-2119457290-43-XXXX, 01-2119943742-35-XXXX | 12 | <u>methyl ethyl ketone</u> | Flammable Liquid Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (narcotic effects); H225, H319, H336, EUH066 ^[3] |
| 1.13463-67-7 2.236-675-5 3. Not Available 4.01-2119954396-27-XXXX, 01-2119489379-17-XXXX | 6 | <u>titanium dioxide</u> | Carcinogenicity Category 1A; H350i ^[1] |
| 1.108-65-6 2.203-603-9 3.607-195-00-7, 607-251-00-0 4.01-2119475791-29-XXXX | 1 | <u>propylene glycol monomethyl ether acetate, alpha-isomer</u> | Flammable Liquid Category 3; H226 ^[3] |
| 1.80-62-6 2.201-297-1 3.607-035-00-6 4.01-2119452498-28-XXXX | 0.1 | <u>methyl methacrylate</u> | Flammable Liquid Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1; H225, H335, H315, H317 ^[3] |
| 1.97-88-1 2.202-615-1 3.607-033-00-5 4.01-2119486394-28-XXXX | 0.1 | <u>n-butyl methacrylate</u> | Flammable Liquid Category 3, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Skin Corrosion/Irritation Category 2, Skin Sensitizer Category 1; H226, H319, H335, H315, H317 ^[3] |

Legend: 1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L

SECTION 4 FIRST AID MEASURES

4.1. Description of first aid measures

| | |
|---------------------|---|
| General | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. <p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with water. ▶ If irritation continues, seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary. ▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |
| Eye Contact | <p>If this product comes in contact with eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with water. ▶ If irritation continues, seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▶ Other measures are usually unnecessary. |
| Ingestion | <ul style="list-style-type: none"> ▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

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.
for simple esters:

BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema .
- ▶ Monitor and treat, where necessary, for shock.
- ▶ **DO NOT use emetics.** Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- ▶ Give activated charcoal.



ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

- ▶ Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime. Other useful analyses include anion and osmolar gaps, arterial blood gases (ABGs), chest radiographs and electrocardiograph.
- ▶ Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- ▶ Consult a toxicologist as necessary.

BRONSTEIN, A.C. and CURRANCE, P.L. *EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994*

SECTION 5 FIREFIGHTING MEASURES

5.1. Extinguishing media

- ▶ Alcohol stable 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

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

5.3. Advice for firefighters

| | |
|------------------------------|---|
| Fire Fighting | <ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Consider evacuation (or protect in place). ▶ Fight fire from a safe distance, with adequate cover. ▶ If safe, switch off electrical equipment until vapour fire hazard removed. ▶ Use water delivered as a fine spray to control the fire and cool adjacent area. ▶ Avoid spraying water onto liquid pools. ▶ Do not approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Liquid and vapour are highly flammable. ▶ Severe fire hazard when exposed to heat, flame and/or oxidisers. ▶ Vapour may travel a considerable distance to source of ignition. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). <p>Combustion products include: carbon dioxide (CO₂) other pyrolysis products typical of burning organic material.</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

- | | |
|--|---|
| | <ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. |
|--|---|

Safety Data Sheet



| Minor Spills | <ul style="list-style-type: none"> ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb small quantities with vermiculite or other absorbent material. ▶ Wipe up. ▶ Collect residues in a flammable waste container. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|--|--------------|-------------|-----------------|------------|-------------|---------------------------|--|--|--|--|------------------------------------|---|--------|--------|----------|-------------------------------|---|-------|-----------|------------|----------------------------|---|--------|--------|---------|--------------------------|---|--------|--------|--------------|---------------------|---|-------|-----------|---------------|-----------------------------|---|-------|-----------|---------|----------------------------|--|--|--|--|------------------------------------|---|--------|-------------|----------|-------------------------------|---|-------|-------------|------------|----------------------------|---|--------|-------------|---------|-----------------------------|---|--------|-------------|------------|--------------------------------|---|--------|-------------|-----------------|--------------------------|---|--------|-------------|--------------|
| Major Spills | <p>Chemical Class: ester and ethers For release onto land: recommended sorbents listed in order of priority.</p> <table border="1"> <thead> <tr> <th>SORBENT TYPE</th> <th>RANK</th> <th>APPLICATION</th> <th>COLLECTION</th> <th>LIMITATIONS</th> </tr> </thead> <tbody> <tr> <td colspan="5">LAND SPILL - SMALL</td> </tr> <tr> <td>cross-linked polymer - particulate</td> <td>1</td> <td>shovel</td> <td>shovel</td> <td>R, W, SS</td> </tr> <tr> <td>cross-linked polymer - pillow</td> <td>1</td> <td>throw</td> <td>pitchfork</td> <td>R, DGC, RT</td> </tr> <tr> <td>sorbent clay - particulate</td> <td>2</td> <td>shovel</td> <td>shovel</td> <td>R, I, P</td> </tr> <tr> <td>wood fiber - particulate</td> <td>3</td> <td>shovel</td> <td>shovel</td> <td>R, W, P, DGC</td> </tr> <tr> <td>wood fiber - pillow</td> <td>3</td> <td>throw</td> <td>pitchfork</td> <td>R, P, DGC, RT</td> </tr> <tr> <td>treated wood fiber - pillow</td> <td>3</td> <td>throw</td> <td>pitchfork</td> <td>DGC, RT</td> </tr> <tr> <td colspan="5">LAND SPILL - MEDIUM</td> </tr> <tr> <td>cross-linked polymer - particulate</td> <td>1</td> <td>blower</td> <td>skid loader</td> <td>R, W, SS</td> </tr> <tr> <td>cross-linked polymer - pillow</td> <td>2</td> <td>throw</td> <td>skid loader</td> <td>R, DGC, RT</td> </tr> <tr> <td>sorbent clay - particulate</td> <td>3</td> <td>blower</td> <td>skid loader</td> <td>R, I, P</td> </tr> <tr> <td>polypropylene - particulate</td> <td>3</td> <td>blower</td> <td>skid loader</td> <td>W, SS, DGC</td> </tr> <tr> <td>expanded mineral - particulate</td> <td>4</td> <td>blower</td> <td>skid loader</td> <td>R, I, W, P, DGC</td> </tr> <tr> <td>wood fiber - particulate</td> <td>4</td> <td>blower</td> <td>skid loader</td> <td>R, W, P, DGC</td> </tr> </tbody> </table> <p>Legend DGC: Not effective where ground cover is dense R: Not reusable I: Not incinerable P: Effectiveness reduced when rainy RT: Not effective where terrain is rugged SS: Not for use within environmentally sensitive sites W: Effectiveness reduced when windy</p> <p>Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control; R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Consider evacuation (or protect in place). ▶ No smoking, naked lights or ignition sources. ▶ Increase ventilation. ▶ Stop leak if safe to do so. ▶ Water spray or fog may be used to disperse /absorb vapour. ▶ Contain spill with sand, earth or vermiculite. ▶ Use only spark-free shovels and explosion proof equipment. ▶ Collect recoverable product into labelled containers for recycling. ▶ Absorb remaining product with sand, earth or vermiculite. ▶ Collect solid residues and seal in labelled drums for disposal. ▶ Wash area and prevent runoff into drains. ▶ If contamination of drains or waterways occurs, advise emergency services. | SORBENT TYPE | RANK | APPLICATION | COLLECTION | LIMITATIONS | LAND SPILL - SMALL | | | | | cross-linked polymer - particulate | 1 | shovel | shovel | R, W, SS | cross-linked polymer - pillow | 1 | throw | pitchfork | R, DGC, RT | sorbent clay - particulate | 2 | shovel | shovel | R, I, P | wood fiber - particulate | 3 | shovel | shovel | R, W, P, DGC | wood fiber - pillow | 3 | throw | pitchfork | R, P, DGC, RT | treated wood fiber - pillow | 3 | throw | pitchfork | DGC, RT | LAND SPILL - MEDIUM | | | | | cross-linked polymer - particulate | 1 | blower | skid loader | R, W, SS | cross-linked polymer - pillow | 2 | throw | skid loader | R, DGC, RT | sorbent clay - particulate | 3 | blower | skid loader | R, I, P | polypropylene - particulate | 3 | blower | skid loader | W, SS, DGC | expanded mineral - particulate | 4 | blower | skid loader | R, I, W, P, DGC | wood fiber - particulate | 4 | blower | skid loader | R, W, P, DGC |
| SORBENT TYPE | RANK | APPLICATION | COLLECTION | LIMITATIONS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAND SPILL - SMALL | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cross-linked polymer - particulate | 1 | shovel | shovel | R, W, SS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cross-linked polymer - pillow | 1 | throw | pitchfork | R, DGC, RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| sorbent clay - particulate | 2 | shovel | shovel | R, I, P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wood fiber - particulate | 3 | shovel | shovel | R, W, P, DGC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wood fiber - pillow | 3 | throw | pitchfork | R, P, DGC, RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| treated wood fiber - pillow | 3 | throw | pitchfork | DGC, RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LAND SPILL - MEDIUM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cross-linked polymer - particulate | 1 | blower | skid loader | R, W, SS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cross-linked polymer - pillow | 2 | throw | skid loader | R, DGC, RT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| sorbent clay - particulate | 3 | blower | skid loader | R, I, P | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| polypropylene - particulate | 3 | blower | skid loader | W, SS, DGC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| expanded mineral - particulate | 4 | blower | skid loader | R, I, W, P, DGC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| wood fiber - particulate | 4 | blower | skid loader | R, W, P, DGC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

| | |
|--|---|
| | <ul style="list-style-type: none"> ▶ Containers, even those that have been emptied, may contain explosive vapours. ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. |
|--|---|



Safety Data Sheet



| | |
|--------------------------------------|---|
| Safe handling | <ul style="list-style-type: none"> ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ Avoid smoking, naked lights, heat or ignition sources. ▶ When handling, DO NOT eat, drink or smoke. ▶ Vapour may ignite on pumping or pouring due to static electricity. ▶ DO NOT use plastic buckets. ▶ Earth and secure metal containers when dispensing or pouring product. ▶ Use spark-free tools when handling. ▶ Avoid contact with incompatible materials. ▶ Keep containers securely sealed. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions. |
| Fire and explosion protection | See section 5 |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers in approved flame-proof area. ▶ No smoking, naked lights, heat or ignition sources. ▶ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▶ Keep containers securely sealed. ▶ Store away from incompatible materials in a cool, dry well ventilated area. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. |

7.2. Conditions for safe storage, including any incompatibilities

| | |
|--------------------------------|--|
| Suitable container | <ul style="list-style-type: none"> ▶ Packing as supplied by manufacturer. ▶ Plastic containers may only be used if approved for flammable liquid. ▶ Check that containers are clearly labelled and free from leaks. ▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. ▶ For materials with a viscosity of at least 2680 cSt. (23 deg. C) ▶ For manufactured product having a viscosity of at least 250 cSt. (23 deg. C) ▶ Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used. ▶ Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages ▶ In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic. |
| Storage incompatibility | <p>n-Butyl acetate:</p> <ul style="list-style-type: none"> ▶ reacts with water on standing to form acetic acid and n-butyl alcohol ▶ reacts violently with strong oxidisers and potassium tert-butoxide ▶ is incompatible with caustics, strong acids and nitrates ▶ dissolves rubber, many plastics, resins and some coatings <p>Methyl ethyl ketone:</p> <ul style="list-style-type: none"> ▶ reacts violently with strong oxidisers, aldehydes, nitric acid, perchloric acid, potassium tert-butoxide, oleum ▶ is incompatible with inorganic acids, aliphatic amines, ammonia, caustics, isocyanates, pyridines, chlorosulfonic acid ▶ forms unstable peroxides in storage, or on contact with propanol or hydrogen peroxide ▶ attacks some plastics |
| | <p>▶ may generate electrostatic charges, due to low conductivity, on flow or agitation</p> <p>Titanium dioxide</p> <ul style="list-style-type: none"> ▶ reacts with strong acids, strong oxidisers ▶ reacts violently with aluminium, calcium, hydrazine, lithium (at around 200 deg C.), magnesium, potassium, sodium, zinc, especially at elevated temperatures - these reactions involves reduction of the oxide and are accompanied by incandescence ▶ dust or powders can ignite and then explode in a carbon dioxide atmosphere ▶ Esters react with acids to liberate heat along with alcohols and acids. ▶ Strong oxidising acids may cause a vigorous reaction with esters that is sufficiently exothermic to ignite the reaction products. ▶ Heat is also generated by the interaction of esters with caustic solutions. ▶ Flammable hydrogen is generated by mixing esters with alkali metals and hydrides. ▶ Esters may be incompatible with aliphatic amines and nitrates. ▶ Avoid strong acids, bases. |

7.3. Specific end use(s)

See section 1.2

Safety Data Sheet



SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|--|---|--|--|---------------------------------|---------------|---------------|
| UK Workplace Exposure Limits (WELs) | n-butyl acetate | Butyl acetate | 724 mg/m ³ / 150 ppm | 966 mg/m ³ / 200 ppm | Not Available | Not Available |
| UK Workplace Exposure Limits (WELs) | methyl ethyl ketone | Butan-2-one (methyl ethyl ketone) | 600 mg/m ³ / 200 ppm | 899 mg/m ³ / 300 ppm | Not Available | Sk, BMGV |
| European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (English) | methyl ethyl ketone | Butanone | 600 mg/m ³ / 200 ppm | 900 mg/m ³ / 300 ppm | Not Available | Not Available |
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs) | methyl ethyl ketone | Butanone | 600 mg/m ³ / 200 ppm | 900 mg/m ³ / 300 ppm | Not Available | Not Available |
| UK Workplace Exposure Limits (WELs) | titanium dioxide | Titanium dioxide total inhalable / Titanium dioxide respirable | 10 mg/m ³ / 4 mg/m ³ | Not Available | Not Available | Not Available |
| UK Workplace Exposure Limits (WELs) | propylene glycol monomethyl ether acetate, alpha-isomer | 1-Methoxypropyl acetate | 274 mg/m ³ / 50 ppm | 548 mg/m ³ / 100 ppm | Not Available | Sk |
| European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (English) | propylene glycol monomethyl ether acetate, alpha-isomer | 2-Methoxy-1-methylethylacetate | 275 mg/m ³ / 50 ppm | 550 mg/m ³ / 100 ppm | Not Available | Skin |
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs) | propylene glycol monomethyl ether acetate, alpha-isomer | 1-Methoxypropyl-2-acetate | 275 mg/m ³ / 50 ppm | 550 mg/m ³ / 100 ppm | Not Available | Skin |
| UK Workplace Exposure Limits (WELs) | methyl methacrylate | Methyl methacrylate | 208 mg/m ³ / 50 ppm | 416 mg/m ³ / 100 ppm | Not Available | Not Available |
| European Union (EU) Third List of Indicative Occupational Exposure Limit Values (IOELVs) (English) | methyl methacrylate | Methyl methacrylate | 50 ppm | 100 ppm | Not Available | Not Available |

EMERGENCY LIMITS

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---|--|----------------------|-----------------------|-------------------------|
| n-butyl acetate | Butyl acetate, n- | Not Available | Not Available | Not Available |
| methyl ethyl ketone | Butanone, 2-; (Methyl ethyl ketone; MEK) | Not Available | Not Available | Not Available |
| titanium dioxide | Titanium oxide; (Titanium dioxide) | 30 mg/m ³ | 330 mg/m ³ | 2,000 mg/m ³ |
| propylene glycol monomethyl ether acetate, alpha-isomer | Propylene glycol monomethyl ether acetate, alpha-isomer; (1-Methoxypropyl-2-acetate) | Not Available | Not Available | Not Available |
| propylene glycol monomethyl ether acetate, alpha-isomer | Propylene glycol monomethyl ether acetate, beta-isomer; (2-Methoxypropyl-1-acetate) | Not Available | Not Available | Not Available |
| methyl methacrylate | Methyl methacrylate | Not Available | Not Available | Not Available |
| n-butyl methacrylate | Methyl butylacrylate, 2-; (Butyl methacrylate) | 19 mg/m ³ | 210 mg/m ³ | 1,300 mg/m ³ |

| Ingredient | Original IDLH | Revised IDLH |
|-----------------|---------------|-----------------|
| n-butyl acetate | 10,000 ppm | 1,700 [LEL] ppm |



Safety Data Sheet



| | | |
|---|-----------------------|------------------|
| methyl ethyl ketone | 3,000 ppm | 3,000 [Unch] ppm |
| titanium dioxide | N.E. mg/m3 / N.E. ppm | 5,000 mg/m3 |
| propylene glycol monomethyl ether acetate, alpha-isomer | Not Available | Not Available |
| methyl methacrylate | 4,000 ppm | 1,000 ppm |
| n-butyl methacrylate | Not Available | Not Available |

MATERIAL DATA

IFRA Prohibited Fragrance Substance

The International Fragrance Association (IFRA) Standards form the basis for the globally accepted and recognized risk management system for the safe use of fragrance ingredients and are part of the IFRA Code of Practice. This is the self-regulating system of the industry, based on risk assessments carried out by an independent Expert Panel

For n-butyl acetate

Odour Threshold Value: 0.0063 ppm (detection), 0.038-12 ppm (recognition)

Exposure at or below the recommended TLV-TWA is thought to prevent significant irritation of the eyes and respiratory passages as well as narcotic effects. In light of the lack of substantive evidence regarding teratogenicity and a review of acute oral data a STEL is considered inappropriate.

Odour Safety Factor(OSF)

OSF=3.8E2 (n-BUTYL ACETATE)

Animals exposed by inhalation to 10 mg/m3 titanium dioxide show no significant fibrosis, possibly reversible tissue reaction. The architecture of lung air spaces remains intact.

for propylene glycol monomethyl ether acetate (PGMEA)

Saturated vapour concentration: 4868 ppm at 20 C.

A two-week inhalation study found nasal effects to the nasal mucosa in animals at concentrations up to 3000 ppm. Differences in the teratogenic potential of the alpha (commercial grade) and beta isomers of PGMEA may be explained by the formation of different metabolites. The beta-isomer is thought to be oxidised to methoxypropionic acid, a homologue to methoxyacetic acid which is a known teratogen. The alpha- form is conjugated and excreted. PGMEA mixture (containing 2% to 5% beta isomer) is a mild skin and eye irritant, produces mild central nervous system effects in animals at 3000 ppm and produces mild CNS impairment and upper respiratory tract and eye irritation in humans at 1000 ppm. In rats exposed to 3000 ppm PGMEA produced slight foetotoxic effects (delayed sternbral ossification) - no effects on foetal development were seen in rabbits exposed at 3000 ppm.

For methyl ethyl ketone:

Odour Threshold Value: Variously reported as 2 ppm and 4.8 ppm

Odour threshold: 2 ppm (detection); 5 ppm (recognition) 25 ppm (easy recognition); 300 ppm IRRITATING

Exposures at or below the recommended TLV-TWA are thought to prevent injurious systemic effects and to minimise objections to odour and irritation. Where synergism or potentiation may occur stringent control of the primary toxin (e.g. n-hexane or methyl butyl ketone) is desirable and additional consideration should be given to lowering MEK exposures.

Odour Safety Factor(OSF)

OSF=28 (METHYL ETHYL KETONE)

Odour Threshold Value (methyl methacrylate): 0.049 ppm (detection), 0.34 ppm (recognition)

NOTE: Detector tubes measuring in excess of 50 ppm, are available.

Concentrations as low as 125 ppm methyl methacrylate have produced irritation of the mucous membranes of exposed workers. The recommended TLV-TWA is thought to be sufficiently low to protect against discomfort from irritation and acute systemic intoxication.

NOTE D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed on Annex I

When they are placed on the market in a non-stabilised form, the label must state the name of the substance followed by the words "non-stabilised"

European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

8.2. Exposure controls

8.2.1. Appropriate engineering controls

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:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

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.

Employers may need to use multiple types of controls to prevent employee overexposure.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

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.

| 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.) |

Safety Data Sheet



| | <p>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</p> | <p>1-2.5 m/s (200-500 f/min.)</p> | | | | | | | | | | |
|--|---|---------------------------------------|------------------------|------------------------|---|---------------------------------|--|----------------------------------|----------------------------------|-------------------------------|---|----------------------------------|
| | <p>Within each range the appropriate value depends on:</p> <table border="1" data-bbox="389 465 1445 622"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> | | Lower end of the range | Upper end of the range | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
| Lower end of the range | Upper end of the range | | | | | | | | | | | |
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | | | | | | | | | | | |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | | | | | | | | | | | |
| 3: Intermittent, low production. | 3: High production, heavy use | | | | | | | | | | | |
| 4: Large hood or large air mass in motion | 4: Small hood-local control only | | | | | | | | | | | |
| <p>8.2.2. Personal protection</p> | <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>Eye and face protection</p> | <ul style="list-style-type: none"> ▶ Safety glasses with side shields ▶ Chemical goggles. ▶ 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] | | | | | | | | | | | |
| <p>Skin protection</p> | <p>See Hand protection below</p> | | | | | | | | | | | |
| <p>Hands/feet protection</p> | <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 moisturizer 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"> - frequency and duration of contact, - chemical resistance of glove material, - glove thickness and - dexterity <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"> - 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. - 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. - Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. - Contaminated gloves should be replaced. <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"> - 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. - 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 <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> <ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber | | | | | | | | | | | |
| <p>Body protection</p> | <p>See Other protection below</p> <ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. | | | | | | | | | | | |



Safety Data Sheet



| | |
|-------------------------|--|
| Other protection | <ul style="list-style-type: none"> ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. ▶ Ensure there is ready access to a safety shower. <ul style="list-style-type: none"> · Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. · For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). · 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. |
| Thermal hazards | Not Available |

Recommended material(s)

GLOVE SELECTION INDEX

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

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

| Material | CPI |
|------------------|-----|
| PE/EVAL/PE | A |
| TEFLON | A |
| PVA | B |
| BUTYL | C |
| BUTYL/NEOPRENE | C |
| HYPALON | C |
| NATURAL RUBBER | C |
| NATURAL+NEOPRENE | C |
| NEOPRENE | C |
| NEOPRENE/NATURAL | C |
| NITRILE | C |
| NITRILE+PVC | C |
| PE | C |
| PVC | C |
| SARANEX-23 | C |
| VITON/BUTYL | C |
| VITON/NEOPRENE | 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.

Respiratory protection

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 vapour concentration is too high, or that the mask is not properly fitted. Because these limitations, only restricted use of cartridge respirators is considered appropriate.

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 / Class 1 | - |
| 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 gases, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 deg C)

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 | White | | |
| Physical state | liquid | Relative density (Water = 1) | 0.93 |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |

Safety Data Sheet



| | | | |
|--|-------------------|----------------------------------|---------------|
| Odour threshold | 0.007 ppm | Auto-ignition temperature (°C) | >315 |
| pH (as supplied) | Not Available | Decomposition temperature | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | 110.00 |
| Initial boiling point and boiling range (°C) | >80 | Molecular weight (g/mol) | Not Available |
| Flash point (°C) | -3 | Taste | Not Available |
| Evaporation rate | <1 BuAC = 1 | Explosive properties | Not Available |
| Flammability | HIGHLY FLAMMABLE. | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | 9.2 | Surface Tension (dyn/cm or mN/m) | Not Available |
| Lower Explosive Limit (%) | 1.8 | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | 4.00 | Gas group | Not Available |
| Solubility in water (g/L) | Partly miscible | pH as a solution (1%) | Not Available |
| Vapour density (Air = 1) | >2.5 | VOC g/L | Not Available |

9.2. Other information

Not Available

SECTION 10 STABILITY AND REACTIVITY

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

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

| | |
|--------------|--|
| Inhaled | <p>The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.</p> <p>Acute exposure of humans to high concentrations of methyl ethyl ketone produces irritation to the eyes, nose, and throat. Other effects reported from acute inhalation exposure in humans include central nervous system depression, headache, and nausea.</p> <p>Easy odour recognition and irritant properties of methyl ethyl ketone means that high vapour levels are readily detected and should be avoided by application of control measures; however odour fatigue may occur with loss of warning of exposure.</p> |
| Ingestion | <p>The material has NOT 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.</p> |
| Skin Contact | <p>The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Dermatitis has been reported in humans following dermal exposure to methyl ethyl ketone. Tests involving acute exposure of rabbits has shown methyl ethyl ketone to have high acute toxicity from dermal exposure.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> |
| Eye | <p>Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).</p> |

Safety Data Sheet



| Chronic | <p>On the basis of epidemiological data, it has been concluded that prolonged inhalation of the material, in an occupational setting, may produce cancer in humans.</p> <p>Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.</p> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Limited information is available on the chronic (long-term) effects of methyl ethyl ketone in humans. Chronic inhalation studies in animals have reported slight neurological, liver, kidney, and respiratory effects. No information is available on the developmental, reproductive, or carcinogenic effects of methyl ethyl ketone in humans. Developmental effects, including decreased foetal weight and foetal malformations, have been reported in mice and rats exposed to methyl ethyl ketone via inhalation and ingestion.</p> <p>Methyl ethyl ketone is considered to have a low order of toxicity; however methyl ethyl ketone is often used in combination with other solvents and the toxic effects of the mix may be greater than either solvent alone. Combinations of n-hexane with methyl ethyl ketone and also methyl n-butyl ketone with methyl ethyl ketone show increase in peripheral neuropathy, a progressive disorder of nerves of extremities.</p> <p>Combinations with chloroform also show increase in toxicity</p> <p>On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.</p> | | | | | | | | | | | | | | | |
|--|---|----------|------------|--|---------------------------------------|--|-----------------------------------|---|------------------------------------|---|------------------------------------|---|--|---|--|--|
| Overcoat Pen - White | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>#551mek^[2]</td> <td>Not Available</td> </tr> </tbody> </table> | TOXICITY | IRRITATION | #551mek ^[2] | Not Available | | | | | | | | | | | |
| TOXICITY | IRRITATION | | | | | | | | | | | | | | | |
| #551mek ^[2] | Not Available | | | | | | | | | | | | | | | |
| n-butyl acetate | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Dermal (rabbit) LD50: 3200 mg/kg*E^[2]</td> <td>Eye (human): 300 mg</td> </tr> <tr> <td>Inhalation (rat) LC50: >21.1 mg/l/4hr^[1]</td> <td>Eye (rabbit): 20 mg (open)-SEVERE</td> </tr> <tr> <td>Inhalation (rat) LC50: 1.802 mg/l/4hr^[1]</td> <td>Eye (rabbit): 20 mg/24h - moderate</td> </tr> <tr> <td>Inhalation (rat) LC50: 2000 ppm/4H^[2]</td> <td>Skin (rabbit): 500 mg/24h-moderate</td> </tr> <tr> <td>Inhalation (rat) LC50: 390 ppm/4hr^[2]</td> <td></td> </tr> <tr> <td>Oral (rat) LD50: 10768 mg/kg^[2]</td> <td></td> </tr> </tbody> </table> | TOXICITY | IRRITATION | Dermal (rabbit) LD50: 3200 mg/kg*E ^[2] | Eye (human): 300 mg | Inhalation (rat) LC50: >21.1 mg/l/4hr ^[1] | Eye (rabbit): 20 mg (open)-SEVERE | Inhalation (rat) LC50: 1.802 mg/l/4hr ^[1] | Eye (rabbit): 20 mg/24h - moderate | Inhalation (rat) LC50: 2000 ppm/4H ^[2] | Skin (rabbit): 500 mg/24h-moderate | Inhalation (rat) LC50: 390 ppm/4hr ^[2] | | Oral (rat) LD50: 10768 mg/kg ^[2] | | |
| TOXICITY | IRRITATION | | | | | | | | | | | | | | | |
| Dermal (rabbit) LD50: 3200 mg/kg*E ^[2] | Eye (human): 300 mg | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: >21.1 mg/l/4hr ^[1] | Eye (rabbit): 20 mg (open)-SEVERE | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: 1.802 mg/l/4hr ^[1] | Eye (rabbit): 20 mg/24h - moderate | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: 2000 ppm/4H ^[2] | Skin (rabbit): 500 mg/24h-moderate | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: 390 ppm/4hr ^[2] | | | | | | | | | | | | | | | | |
| Oral (rat) LD50: 10768 mg/kg ^[2] | | | | | | | | | | | | | | | | |
| methyl ethyl ketone | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Dermal (rabbit) LD50: 6480 mg/kg^[2]</td> <td>Eye (human): 350 ppm -irritant</td> </tr> <tr> <td>Oral (rat) LD50: 2054 mg/kg^[1]</td> <td>Eye (rabbit): 80 mg - irritant</td> </tr> <tr> <td></td> <td>Skin (rabbit): 402 mg/24 hr - mild</td> </tr> <tr> <td></td> <td>Skin (rabbit):13.78mg/24 hr open</td> </tr> </tbody> </table> | TOXICITY | IRRITATION | Dermal (rabbit) LD50: 6480 mg/kg ^[2] | Eye (human): 350 ppm -irritant | Oral (rat) LD50: 2054 mg/kg ^[1] | Eye (rabbit): 80 mg - irritant | | Skin (rabbit): 402 mg/24 hr - mild | | Skin (rabbit):13.78mg/24 hr open | | | | | |
| TOXICITY | IRRITATION | | | | | | | | | | | | | | | |
| Dermal (rabbit) LD50: 6480 mg/kg ^[2] | Eye (human): 350 ppm -irritant | | | | | | | | | | | | | | | |
| Oral (rat) LD50: 2054 mg/kg ^[1] | Eye (rabbit): 80 mg - irritant | | | | | | | | | | | | | | | |
| | Skin (rabbit): 402 mg/24 hr - mild | | | | | | | | | | | | | | | |
| | Skin (rabbit):13.78mg/24 hr open | | | | | | | | | | | | | | | |
| titanium dioxide | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Inhalation (rat) LC50: >2.28 mg/l/4hr^[1]</td> <td>Skin (human): 0.3 mg /3D (int)-mild *</td> </tr> <tr> <td>Inhalation (rat) LC50: >3.56 mg/l/4hr^[1]</td> <td></td> </tr> <tr> <td>Inhalation (rat) LC50: >6.82 mg/l/4hr^[1]</td> <td></td> </tr> <tr> <td>Oral (rat) LD50: >2000 mg/kg^[1]</td> <td></td> </tr> </tbody> </table> | TOXICITY | IRRITATION | Inhalation (rat) LC50: >2.28 mg/l/4hr ^[1] | Skin (human): 0.3 mg /3D (int)-mild * | Inhalation (rat) LC50: >3.56 mg/l/4hr ^[1] | | Inhalation (rat) LC50: >6.82 mg/l/4hr ^[1] | | Oral (rat) LD50: >2000 mg/kg ^[1] | | | | | | |
| TOXICITY | IRRITATION | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: >2.28 mg/l/4hr ^[1] | Skin (human): 0.3 mg /3D (int)-mild * | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: >3.56 mg/l/4hr ^[1] | | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: >6.82 mg/l/4hr ^[1] | | | | | | | | | | | | | | | | |
| Oral (rat) LD50: >2000 mg/kg ^[1] | | | | | | | | | | | | | | | | |
| propylene glycol monomethyl ether acetate, alpha-isomer | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>dermal (rat) LD50: >2000 mg/kg^[1]</td> <td>Not Available</td> </tr> <tr> <td>Inhalation (rat) LC50: 6517.5 ppm/6hr^[2]</td> <td></td> </tr> <tr> <td>Oral (rat) LD50: >5000 mg/kg^[1]</td> <td></td> </tr> </tbody> </table> | TOXICITY | IRRITATION | dermal (rat) LD50: >2000 mg/kg ^[1] | Not Available | Inhalation (rat) LC50: 6517.5 ppm/6hr ^[2] | | Oral (rat) LD50: >5000 mg/kg ^[1] | | | | | | | | |
| TOXICITY | IRRITATION | | | | | | | | | | | | | | | |
| dermal (rat) LD50: >2000 mg/kg ^[1] | Not Available | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: 6517.5 ppm/6hr ^[2] | | | | | | | | | | | | | | | | |
| Oral (rat) LD50: >5000 mg/kg ^[1] | | | | | | | | | | | | | | | | |
| methyl methacrylate | <table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Dermal (rabbit) LD50: >5000 mg/kg^[2]</td> <td>Eye (rabbit): 150 mg</td> </tr> <tr> <td>Inhalation (rat) LC50: ca.10125 ppm3 hr^[1]</td> <td>Skin (rabbit): 10000 mg/kg (open)</td> </tr> <tr> <td>Inhalation (rat) LC50: ca.7500 ppm8 hr^[1]</td> <td></td> </tr> <tr> <td>Oral (rat) LD50: 7872 mg/kg^[2]</td> <td></td> </tr> </tbody> </table> | TOXICITY | IRRITATION | Dermal (rabbit) LD50: >5000 mg/kg ^[2] | Eye (rabbit): 150 mg | Inhalation (rat) LC50: ca.10125 ppm3 hr ^[1] | Skin (rabbit): 10000 mg/kg (open) | Inhalation (rat) LC50: ca.7500 ppm8 hr ^[1] | | Oral (rat) LD50: 7872 mg/kg ^[2] | | | | | | |
| TOXICITY | IRRITATION | | | | | | | | | | | | | | | |
| Dermal (rabbit) LD50: >5000 mg/kg ^[2] | Eye (rabbit): 150 mg | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: ca.10125 ppm3 hr ^[1] | Skin (rabbit): 10000 mg/kg (open) | | | | | | | | | | | | | | | |
| Inhalation (rat) LC50: ca.7500 ppm8 hr ^[1] | | | | | | | | | | | | | | | | |
| Oral (rat) LD50: 7872 mg/kg ^[2] | | | | | | | | | | | | | | | | |

Safety Data Sheet



| n-butyl methacrylate | TOXICITY | IRRITATION |
|----------------------|--|-----------------------------------|
| | Dermal (rabbit) LD50: 11300 mg/kg ^[2] | Skin (rabbit): 10000 mg/kg (open) |
| | Inhalation (rat) LC50: 4910 ppm/4hr ^[2] | |
| | Oral (rat) LD50: 22600 mg/kg ^[2] | |

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

| | |
|---|--|
| N-BUTYL ACETATE | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| METHYL ETHYL KETONE | Methyl ethyl ketone is considered to have a low order of toxicity; however methyl ethyl ketone is often used in combination with other solvents and the toxic effects of the mix may be greater than either solvent alone. Combinations of n-hexane with methyl ethyl ketone and also methyl n-butyl ketone with methyl ethyl ketone show increase in peripheral neuropathy, a progressive disorder of nerves of extremities. |
| TITANIUM DIOXIDE | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. For titanium dioxide: Humans can be exposed to titanium dioxide via inhalation, ingestion or dermal contact. In human lungs, the clearance kinetics of titanium dioxide is poorly characterized relative to that in experimental animals. WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. * IUCLID |
| PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER | for propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA); tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical. *Shin-Etsu SDS |
| METHYL METHACRYLATE | For methyl methacrylate: Acute toxicity: MMA is rapidly absorbed after oral or inhalatory administration. <i>In vitro</i> skin absorption studies in human skin indicate that MMA can be absorbed through human skin. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. Inhalation (human) TCLo: 60 mg/m3(15 ppm) [* Manuf. Rohm & Haas] |
| N-BUTYL METHACRYLATE | For iso-butyl methacrylate (i-BMA) and n-butyl methacrylate (n-BMA): Acute toxicity: It is anticipated that BMA is absorbed after oral or inhalation exposure. In vitro studies using isolated rat liver microsomes or porcine liver esterase showed rapid hydrolysis of n-BMA yielding methacrylic acid and n-butanol. |
| N-BUTYL ACETATE & METHYL ETHYL KETONE | The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. |
| METHYL ETHYL KETONE & METHYL METHACRYLATE & N-BUTYL METHACRYLATE | 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. |
| METHYL METHACRYLATE & N-BUTYL METHACRYLATE | 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. |
| METHYL METHACRYLATE & N-BUTYL METHACRYLATE | 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 Monoalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53 Monoalkyl or monoaryl estere of methacrylic acid should be classified as R36/37/38 |

Safety Data Sheet



METHYL METHACRYLATE & N-BUTYL METHACRYLATE 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 ($\text{CH}_2=\text{CHCOO}$ or $\text{CH}_2=\text{C}(\text{CH}_3)\text{COO}$) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing. This position has now been revised and acrylates and methacrylates are no longer *de facto* carcinogens.

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

Legend: ✗ – Data available but does not fill the criteria for classification
 ✓ – Data available to make classification
 ⊖ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

| Overcoat Pen - White | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|----------------------|----------------|--------------------|----------------|----------------|----------------|
| | Not Applicable | Not Applicable | Not Applicable | Not Applicable | Not Applicable |

| n-butyl acetate | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|-----------------|----------|--------------------|-------------------------------|-----------|--------|
| | LC50 | 96 | Fish | 18mg/L | 2 |
| | EC50 | 48 | Crustacea | =32mg/L | 1 |
| | EC50 | 96 | Algae or other aquatic plants | 1.675mg/L | 3 |
| | EC50 | 96 | Fish | 18mg/L | 2 |

| methyl ethyl ketone | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---------------------|----------|--------------------|-------------------------------|-------------|--------|
| | LC50 | 96 | Fish | 228.130mg/L | 3 |
| | EC50 | 48 | Crustacea | 308mg/L | 2 |
| | EC50 | 96 | Algae or other aquatic plants | >500mg/L | 4 |
| | EC50 | 384 | Crustacea | 52.575mg/L | 3 |
| NOEC | 48 | Crustacea | 68mg/L | 2 | |

| titanium dioxide | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|------------------|----------|--------------------|-------------------------------|-----------|--------|
| | LC50 | 96 | Fish | 9.214mg/L | 3 |
| | EC50 | 48 | Crustacea | >10mg/L | 2 |
| | EC50 | 72 | Algae or other aquatic plants | 5.83mg/L | 4 |
| | EC20 | 72 | Algae or other aquatic plants | 1.81mg/L | 4 |
| NOEC | 336 | Fish | 0.089mg/L | 4 | |

| propylene glycol monomethyl ether acetate, alpha-isomer | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|----------|--------------------|-------------------------------|-----------|--------|
| | LC50 | 96 | Fish | 100mg/L | 1 |
| | EC50 | 48 | Crustacea | =408mg/L | 1 |
| | EC50 | 96 | Algae or other aquatic plants | 9.337mg/L | 3 |
| | EC0 | 24 | Crustacea | =500mg/L | 1 |
| NOEC | 336 | Fish | 47.5mg/L | 2 | |

| LC50 | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|------|----------|--------------------|------------|-------|--------|
| LC50 | 96 | Fish | 43.382mg/L | 3 | |



Safety Data Sheet



| | | | | | |
|----------------------|----------|--------------------|-------------------------------|-----------|--------|
| methyl methacrylate | EC50 | 48 | Crustacea | =69mg/L | 1 |
| | EC50 | 72 | Algae or other aquatic plants | >110mg/L | 2 |
| | EC3 | 192 | Algae or other aquatic plants | =37mg/L | 1 |
| | NOEC | 504 | Crustacea | 37mg/L | 2 |
| n-butyl methacrylate | ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
| | LC50 | 96 | Fish | 5.478mg/L | 3 |
| | EC50 | 48 | Crustacea | 32mg/L | 1 |
| | EC50 | 96 | Algae or other aquatic plants | 57mg/L | 1 |
| | EC50 | 504 | Crustacea | 6.59mg/L | 2 |
| | NOEC | 336 | Fish | 0.78mg/L | 2 |

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*

For methyl ethyl ketone:

log Kow : 0.26-0.69

log Koc : 0.69

Koc : 34

Half-life (hr) air : 2.3

Half-life (hr) H2O surface water : 72-288

Henry's atm m3 /mol: 1.05E-05

BOD 5 : 1.5-2.24, 46%

COD : 2.2-2.31, 100%

ThOD : 2.44

BCF : 1

Environmental fate:

TERRESTRIAL FATE: Measured Koc values of 29 and 34 were obtained for methyl ethyl ketone in silt loams. Methyl ethyl ketone is expected to have very high mobility in soil. Volatilisation of methyl ethyl ketone from dry soil surfaces is expected based upon an experimental vapor pressure of 91 mm Hg at 25 deg C. Volatilization from moist soil surfaces is also expected given the measured Henry's Law constant of 4.7x10⁻⁵ atm-cu m/mole. The volatilisation half-life of methyl ethyl ketone from silt and sandy loams was measured as 4.9 days. Methyl ethyl ketone is expected to biodegrade under both aerobic and anaerobic conditions as indicated by numerous screening tests.

AQUATIC FATE: Based on Koc values, methyl ethyl ketone is not expected to adsorb to suspended solids and sediment in water. Methyl ethyl ketone is expected to volatilise from water surfaces based on the measured Henry's Law constant. Estimated half-lives for a model river and model lake are 19 and 197, hours respectively. Biodegradation of this compound is expected based upon numerous screening tests. An estimated BCF value of 1 based on an experimental log Kow of 0.29, suggests that bioconcentration in aquatic organisms is low.

ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, methyl ethyl ketone, which has an experimental vapor pressure of 91 mm Hg at 25 deg C, will exist solely as a vapor in the ambient atmosphere. Vapour-phase methyl ethyl ketone is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be about 14 days. Methyl ethyl ketone is also expected to undergo photodecomposition in the atmosphere by natural sunlight.

Photochemical degradation of methyl ethyl ketone by natural sunlight is expected to occur at approximately 1/5 the rate of degradation by photochemically produced hydroxyl radicals.

Ecotoxicity:

Fish LC50 (24 h): bluegill sunfish (*Lepomis macrochirus*) 1690-5640 mg/l; guppy (*Lebistes reticulatus*) 5700 mg/l; goldfish (*Carassius auratus*) >5000 mg/l

Fish LC50 (96 h): fathead minnow (*Pimephales promelas*) 3200 mg/l; bluegill sunfish (*Lepomis macrochirus*) 4467 mg/l; mosquito fish (*Gambusia affinis*) 5600 mg/l

Daphnia magna LC50 (48 h): <520-1382 mg/l

Daphnia magna LC50 (24 h): 8890 mg/l

Brine shrimp (*Artemia salina*) LC50 (24 h): 1950 mg/l

For n-butyl acetate:

Half-life (hr) air : 144

Half-life (hr) H2O surface water : 178-27156

Henry's atm m3 /mol: 3.20E-04

BOD 5 if unstated: 0.15-1.02,7%

COD : 78%

ThOD : 2.207

BCF : 4-14

Environmental Fate:

TERRESTRIAL FATE: An estimated Koc value of 200 determined from a measured log Kow of 1.78 indicates that n-butyl acetate is expected to have moderate mobility in soil. Volatilisation of n-butyl acetate is expected from moist soil surfaces given its Henry's Law constant of 2.8x10⁻⁴ atm-cu m/mole. Volatilisation from dry soil surfaces is expected based on a measured vapor pressure of 11.5 mm Hg. Using a standard BOD dilution technique and a sewage inoculum, theoretical BODs of 56 % to 86 % were observed during 5-20 day incubation periods, which suggests that n-butyl acetate may biodegrade in soil.

AQUATIC FATE: An estimated Koc value indicates that n-butyl acetate is not expected to adsorb to suspended solids and sediment in water. Butyl acetate is expected to volatilise from water surfaces based on a Henry's Law constant of 2.8x10⁻⁴ atm-cu m/mole. Estimated half-lives for a model river and model lake are 7 and 127, hours respectively. An estimated BCF value of 10 based on the log Kow, suggests that bioconcentration in aquatic organisms is low. Using a filtered sewage seed, 5-day and 20-day theoretical BODs of 58 % and 83 % were measured in freshwater dilution tests; 5-day and 20-day theoretical BODs of 40 % and 61 % were measured in salt water. A 5-day theoretical BOD of 56.8 % and 51.8 % were measured for n-butyl acetate in distilled water and seawater, respectively. Hydrolysis may be an important environmental fate for this compound based upon experimentally determined hydrolysis half-lives of 114 and 11 days at pH 8 and 9 respectively.

ATMOSPHERIC FATE: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere, n-butyl acetate, which has a vapour pressure of 11.5 mm Hg at 25 deg C, is expected to exist solely as a vapor in the ambient atmosphere. Vapour-phase n-butyl acetate is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be about 4 days

Safety Data Sheet



Environmental fate:

Fish LC50 (96 h, 23 C): island silverside (*Menidia beryllina*) 185 ppm (static bioassay in synthetic seawater, mild aeration applied after 24 h); bluegill sunfish (*Lepomis macrochirus*) 100 ppm (static bioassay in fresh water, mild aeration applied after 24 h)

Fish EC50 (96 h): fathead minnow (*Pimephales promelas*) 18 mg/l (affected fish lost equilibrium prior to death)

Daphnia LC50 (48 h): 44 ppm

Algal LC50 (96 h): *Scenedesmus* 320 ppm

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---------------------------|------------------------------|
| n-butyl acetate | LOW | LOW |
| methyl ethyl ketone | LOW (Half-life = 14 days) | LOW (Half-life = 26.75 days) |
| titanium dioxide | HIGH | HIGH |
| propylene glycol monomethyl ether acetate, alpha-isomer | LOW | LOW |
| methyl methacrylate | LOW | LOW |
| n-butyl methacrylate | LOW | LOW |

12.3. Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---------------------|
| n-butyl acetate | LOW (BCF = 14) |
| methyl ethyl ketone | LOW (LogKOW = 0.29) |
| titanium dioxide | LOW (BCF = 10) |
| propylene glycol monomethyl ether acetate, alpha-isomer | LOW (LogKOW = 0.56) |
| methyl methacrylate | LOW (BCF = 6.6) |
| n-butyl methacrylate | LOW (BCF = 114) |

12.4. Mobility in soil

| Ingredient | Mobility |
|---|----------------------|
| n-butyl acetate | LOW (KOC = 20.86) |
| methyl ethyl ketone | MEDIUM (KOC = 3.827) |
| titanium dioxide | LOW (KOC = 23.74) |
| propylene glycol monomethyl ether acetate, alpha-isomer | HIGH (KOC = 1.838) |
| methyl methacrylate | LOW (KOC = 10.14) |
| n-butyl methacrylate | LOW (KOC = 63.6) |

12.5. Results of PBT and vPvB assessment

| | P | B | T |
|-------------------------|---------------|---------------|---------------|
| Relevant available data | Not Available | Not Available | Not Available |
| PBT Criteria fulfilled? | Not Available | Not Available | Not Available |

12.6. Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

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.

A Hierarchy of Controls seems to be common - the user should investigate:

- ▶ Reduction
- ▶ Reuse
- ▶ Recycling
- ▶ Disposal (if all else fails)

Safety Data Sheet



| | |
|-------------------------------------|--|
| Product / Packaging disposal | <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"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible. ▶ 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. ▶ 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). ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed. |
| Waste treatment options | Not Available |
| Sewage disposal options | Not Available |

SECTION 14 TRANSPORT INFORMATION

Labels Required

| | |
|-------------------------|------|
| | |
| Marine Pollutant | NO |
| HAZCHEM | *3YE |

Land transport (ADR)

| | | | | | | | | | | | |
|---|--|--------------------------------|----|---------------------|----------------|--------------|---|--------------------|-------------------|------------------|-----|
| 14.1.UN number | 1263 | | | | | | | | | | |
| 14.2.UN proper shipping name | PAINT or PAINT RELATED MATERIAL | | | | | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>Class</td> <td>3</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table> | Class | 3 | Subrisk | Not Applicable | | | | | | |
| Class | 3 | | | | | | | | | | |
| Subrisk | Not Applicable | | | | | | | | | | |
| 14.4.Packing group | II | | | | | | | | | | |
| 14.5.Environmental hazard | Not Applicable | | | | | | | | | | |
| 14.6. Special precautions for user | <table border="1"> <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>163 640C 640D 650</td> </tr> <tr> <td>Limited quantity</td> <td>5 L</td> </tr> </table> | Hazard identification (Kemler) | 33 | Classification code | F1 | Hazard Label | 3 | Special provisions | 163 640C 640D 650 | Limited quantity | 5 L |
| Hazard identification (Kemler) | 33 | | | | | | | | | | |
| Classification code | F1 | | | | | | | | | | |
| Hazard Label | 3 | | | | | | | | | | |
| Special provisions | 163 640C 640D 650 | | | | | | | | | | |
| Limited quantity | 5 L | | | | | | | | | | |

Air transport (ICAO-IATA / DGR)

| | | | | | | | |
|---|--|-----------------|---|---------------------|----------------|----------|----|
| 14.1. UN number | 1263 | | | | | | |
| 14.2. UN proper shipping name | PAINT (including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound) | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>ICAO/IATA Class</td> <td>3</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>3L</td> </tr> </table> | ICAO/IATA Class | 3 | ICAO / IATA Subrisk | Not Applicable | ERG Code | 3L |
| ICAO/IATA Class | 3 | | | | | | |
| ICAO / IATA Subrisk | Not Applicable | | | | | | |
| ERG Code | 3L | | | | | | |
| 14.4. Packing group | II | | | | | | |
| 14.5. Environmental hazard | Not Applicable | | | | | | |



Safety Data Sheet



| | | |
|---|---|-------------|
| 14.6. Special precautions for user | Special provisions | A3 A72 A192 |
| | 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 | 1263 | | | | | | |
| 14.2. UN proper shipping name | Paint (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"><tr><td>IMDG Class</td><td>3</td></tr><tr><td>IMDG Subrisk</td><td>Not Applicable</td></tr></table> | IMDG Class | 3 | IMDG Subrisk | Not Applicable | | |
| IMDG Class | 3 | | | | | | |
| IMDG Subrisk | Not Applicable | | | | | | |
| 14.4. Packing group | II | | | | | | |
| 14.5. Environmental hazard | Not Applicable | | | | | | |
| 14.6. Special precautions for user | <table border="1"><tr><td>EMS Number</td><td>F-E, S-E</td></tr><tr><td>Special provisions</td><td>163 367</td></tr><tr><td>Limited Quantities</td><td>5 L</td></tr></table> | EMS Number | F-E, S-E | Special provisions | 163 367 | Limited Quantities | 5 L |
| EMS Number | F-E, S-E | | | | | | |
| Special provisions | 163 367 | | | | | | |
| Limited Quantities | 5 L | | | | | | |

Inland waterways transport (ADN)

| | | | | | | | | | | | |
|---|---|---------------------|----------------|--------------------|---------------------------|------------------|-----|--------------------|-----------|-------------------|---|
| 14.1. UN number | 1263 | | | | | | | | | | |
| 14.2. UN proper shipping name | PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) | | | | | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"><tr><td>3</td><td>Not Applicable</td></tr></table> | 3 | Not Applicable | | | | | | | | |
| 3 | Not Applicable | | | | | | | | | | |
| 14.4. Packing group | II | | | | | | | | | | |
| 14.5. Environmental hazard | Not Applicable | | | | | | | | | | |
| 14.6. Special precautions for user | <table border="1"><tr><td>Classification code</td><td>F1</td></tr><tr><td>Special provisions</td><td>163; 367; 640C; 650; 640D</td></tr><tr><td>Limited quantity</td><td>5 L</td></tr><tr><td>Equipment required</td><td>PP, EX, A</td></tr></table> <table border="1"><tr><td>Fire cones number</td><td>1</td></tr></table> | Classification code | F1 | Special provisions | 163; 367; 640C; 650; 640D | Limited quantity | 5 L | Equipment required | PP, EX, A | Fire cones number | 1 |
| Classification code | F1 | | | | | | | | | | |
| Special provisions | 163; 367; 640C; 650; 640D | | | | | | | | | | |
| Limited quantity | 5 L | | | | | | | | | | |
| Equipment required | PP, EX, A | | | | | | | | | | |
| Fire cones number | 1 | | | | | | | | | | |

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

Not Applicable

SECTION 15 REGULATORY INFORMATION

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

N-BUTYL ACETATE(123-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

UK Workplace Exposure Limits (WELs)

Safety Data Sheet



METHYL ETHYL KETONE(78-93-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs) | European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English) |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31 |
| European Customs Inventory of Chemical Substances ECICS (English) | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| European Trade Union Confederation (ETUC) Priority List for REACH Authorisation | UK Workplace Exposure Limits (WELs) |

TITANIUM DIOXIDE(13463-67-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances | European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English) |
| European Customs Inventory of Chemical Substances ECICS (English) | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| European Trade Union Confederation (ETUC) Priority List for REACH Authorisation | UK Workplace Exposure Limits (WELs) |

PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER(108-65-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|--|
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs) | European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English) |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31 |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 6) Toxic to reproduction: category 1B (Table 3.1)/category 2 (Table 3.2) | European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances (updated by ATP: 31) - Reprotoxic Substances |
| Europe AeroSpace and Defence Industries Association of Europe (ASD) REACH Implementation Working Group Priority Declarable Substances List (PDSL) | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| European Customs Inventory of Chemical Substances ECICS (English) | UK Workplace Exposure Limits (WELs) |

METHYL METHACRYLATE(80-62-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | European Union (EU) Third List of Indicative Occupational Exposure Limit Values (IOELVs) (English) |
| European Customs Inventory of Chemical Substances ECICS (English) | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English) | International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft |
| European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31 | UK Workplace Exposure Limits (WELs) |

N-BUTYL METHACRYLATE(97-88-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

| | |
|--|---|
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31 |
| European Customs Inventory of Chemical Substances ECICS (English) | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English) | |

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : 98/24/EC, 92/85/EC, 94/33/EC, 91/689/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments

15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

ECHA SUMMARY

| Ingredient | CAS number | Index No | ECHA Dossier |
|-----------------|------------|--------------|-----------------------|
| n-butyl acetate | 123-86-4 | 607-025-00-1 | 01-2119485493-29-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|--------------------------------|--|
| 1 | Flam. Liq. 3, STOT SE 3 | GHS07, GHS02, Wng | H226, H336 |
| 2 | Flam. Liq. 3, STOT SE 3, Aquatic Chronic 1, Flam. Liq. 2, Skin Irrit. 2, Eye Irrit. 2, Acute Tox. 2, Acute Tox. 4, Aquatic Chronic 2 | Wng, GHS01, Dgr, GHS06, GHS08 | H336, H319, H225, H315, H330, H335, H317 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient | CAS number | Index No | ECHA Dossier |
|---------------------|------------|--------------|--|
| methyl ethyl ketone | 78-93-3 | 606-002-00-3 | 01-2119457290-43-XXXX, 01-2119943742-35-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|-----------------------------------|--------------------------------|--------------------------|
|-------------------------------|-----------------------------------|--------------------------------|--------------------------|

Safety Data Sheet



| | | | |
|---|---|------------------------|--|
| 1 | Flam. Liq. 2, Eye Irrit. 2, STOT SE 3 | GHS07, GHS02, Dgr | H225, H319, H336 |
| 2 | Flam. Liq. 2, Eye Irrit. 2, STOT SE 3, Skin Irrit. 2, Eye Irrit. 2A | Dgr, Wng, GHS01, GHS08 | H225, H319, H336, H371, H335, H312, H341, H302, H361, H314 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient | CAS number | Index No | ECHA Dossier |
|------------------|------------|---------------|--|
| titanium dioxide | 13463-67-7 | Not Available | 01-2119954396-27-XXXX, 01-2119489379-17-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|---|---|--|
| 1 | Acute Tox. 4, Carc. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Not Classified, Acute Tox. 4, Carc. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3, Not Classified, Acute Tox. 4, Carc. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1, STOT SE 2, Carc. 1B, Skin Irrit. 2, Aquatic Chronic 4, STOT RE 2 | GHS08, Dgr, Wng, GHS08, Dgr, Wng, GHS08, Wng, Dgr | H302, H351, H315, H319, H332, H335, H302, H351, H315, H319, H332, H335, H332, H335, H372, H350, H315, H318, H302, H312 |
| 2 | Acute Tox. 4, Carc. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3 | GHS08, Dgr, Wng | H302, H351, H315, H319, H332, H335 |
| 1 | Not Classified | GHS08, Dgr, Wng, GHS08, Dgr, Wng, GHS08, Wng, Dgr | H302, H351, H315, H319, H332, H335, H302, H351, H315, H319, H332, H335, H332, H335, H372, H350, H315, H318, H302, H312 |
| 2 | Acute Tox. 4, Carc. 2, Skin Irrit. 2, Eye Irrit. 2, STOT SE 3 | GHS08, Dgr, Wng | H302, H351, H315, H319, H332, H335 |
| 1 | Not Classified | GHS08, Dgr, Wng, GHS08, Dgr, Wng, GHS08, Wng, Dgr | H302, H351, H315, H319, H332, H335, H302, H351, H315, H319, H332, H335, H332, H335, H372, H350, H315, H318, H302, H312 |
| 2 | Acute Tox. 4, Carc. 2, Eye Irrit. 2, STOT SE 3, STOT RE 1, STOT SE 2, Carc. 1B, Skin Irrit. 2, Aquatic Chronic 4, STOT RE 2 | GHS08, Wng, Dgr | H332, H335, H372, H350, H315, H318, H302, H312 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|------------|----------------------------|-----------------------|
| propylene glycol monomethyl ether acetate, alpha-isomer | 108-65-6 | 607-195-00-7, 607-251-00-0 | 01-2119475791-29-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|---|--------------------------------|--------------------------|
| 1 | Flam. Liq. 3 | GHS02, Wng | H226 |
| 2 | Flam. Liq. 3, Eye Irrit. 2, Eye Dam. 1, STOT SE 3 | GHS02, Wng, GHS03, GHS05, Dgr | H226, H319, H335, H336 |
| 1 | Flam. Liq. 3, STOT SE 3, Repr. 1B | GHS07, GHS02, GHS08, Dgr | H226, H335, H360 |
| 2 | Flam. Liq. 3, STOT SE 3, Repr. 1B, Repr. 1A | GHS02, GHS08, Dgr | H226, H335, H360, H370 |
| 2 | Flam. Liq. 3, Eye Irrit. 2, Repr. 1B | GHS02, GHS08, Dgr, Wng | H226, H319, H360 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient | CAS number | Index No | ECHA Dossier |
|---------------------|------------|--------------|-----------------------|
| methyl methacrylate | 80-62-6 | 607-035-00-6 | 01-2119452498-28-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|--------------------------------|--|
| 1 | Flam. Liq. 2, Skin Irrit. 2, Skin Sens. 1, STOT SE 3 | GHS07, GHS02, Dgr | H225, H315, H317, H335 |
| 2 | Flam. Liq. 2, Skin Irrit. 2, Skin Sens. 1, STOT SE 3, Skin Sens. 1B, Eye Irrit. 2, Resp. Sens. 1, Repr. 2, STOT RE 1 | GHS02, Dgr, GHS08, Wng | H225, H315, H317, H335, H370, H228, H334, H361, H372 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.

| Ingredient | CAS number | Index No | ECHA Dossier |
|----------------------|------------|--------------|-----------------------|
| n-butyl methacrylate | 97-88-1 | 607-033-00-5 | 01-2119486394-28-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|---|--------------------------------|------------------------------------|
| 1 | Flam. Liq. 3, Skin Irrit. 2, Skin Sens. 1, Eye Irrit. 2, STOT SE 3 | GHS07, GHS02, Wng | H226, H315, H317, H319, H335 |
| 2 | Flam. Liq. 3, Skin Irrit. 2, Skin Sens. 1, Eye Irrit. 2, STOT SE 3, Skin Sens. 1B | GHS07, GHS02, Wng | H226, H315, H317, H319, H335, H302 |

Harmonisation Code 1 = The most prevalent classification. Harmonisation Code 2 = The most severe classification.



Safety Data Sheet



| National Inventory | Status |
|-------------------------------|--|
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (propylene glycol monomethyl ether acetate, alpha-isomer; methyl methacrylate; n-butyl acetate; n-butyl methacrylate; methyl ethyl ketone) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | N (n-butyl acetate; n-butyl methacrylate; methyl ethyl ketone) |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | Y |
| Legend: | Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets) |

SECTION 16 OTHER INFORMATION

Full text Risk and Hazard codes

| | |
|--------------|--|
| H226 | Flammable liquid and vapour. |
| H228 | Flammable solid. |
| H302 | Harmful if swallowed. |
| H312 | Harmful in contact with skin. |
| H314 | Causes severe skin burns and eye damage. |
| H315 | Causes skin irritation. |
| H318 | Causes serious eye damage. |
| H330 | Fatal if inhaled. |
| H332 | Harmful if inhaled. |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation. |
| H341 | Suspected of causing genetic defects. |
| H350 | May cause cancer. |
| H350i | May cause cancer by inhalation. |
| H351 | Suspected of causing cancer. |
| H360 | May damage fertility or the unborn child. |
| H361 | Suspected of damaging fertility or the unborn child. |
| H370 | Causes damage to organs. |
| H371 | May cause damage to organs. |
| H372 | Causes damage to organs through prolonged or repeated exposure. |

Other information

Ingredients with multiple cas numbers

| Name | CAS No |
|---|---|
| titanium dioxide | 13463-67-7, 1317-70-0, 1317-80-2, 12188-41-9, 1309-63-3, 100292-32-8, 101239-53-6, 116788-85-3, 12000-59-8, 12701-76-7, 12767-65-6, 12789-63-8, 1344-29-2, 185323-71-1, 185828-91-5, 188357-76-8, 188357-79-1, 195740-11-5, 221548-98-7, 224963-00-2, 246178-32-5, 252962-41-7, 37230-92-5, 37230-94-7, 37230-95-8, 37230-96-9, 39320-58-6, 39360-64-0, 39379-02-7, 416845-43-7, 494848-07-6, 494848-23-6, 494851-77-3, 494851-98-8, 55068-84-3, 55068-85-4, 552316-51-5, 62338-64-1, 767341-00-4, 97929-50-5, 98084-96-9 |
| propylene glycol monomethyl ether acetate, alpha-isomer | 108-65-6, 84540-57-8, 142300-82-1 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee 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.

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

EN 166 Personal eye-protection

Safety Data Sheet



EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average
PC – STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

| |
|--------------------|
| Part Number |
|--------------------|

| |
|----------|
| MC002958 |
|----------|

Important Notice : This data sheet and its contents (the "Information") belong to the members of the Premier Farnell group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp is the registered trademark of the Group. © Premier Farnell Limited 2016.

www.element14.com
www.farnell.com
www.newark.com

