



## Single Ply / Plastic Primer

Version No: 4.8

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 14/06/2024

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S.GHS.USA.EN

### SECTION 1 Identification

#### Product Identifier

|                               |                                                                                         |
|-------------------------------|-----------------------------------------------------------------------------------------|
| Product name                  | Single Ply / Plastic Primer                                                             |
| Synonyms                      | Not Available                                                                           |
| Proper shipping name          | Paint related material including paint thinning, drying, removing, or reducing compound |
| Other means of identification | Not Available                                                                           |

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

|                          |                                              |
|--------------------------|----------------------------------------------|
| Relevant identified uses | Primer for use within the Impermitek Systems |
|--------------------------|----------------------------------------------|

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

|                         |                                           |
|-------------------------|-------------------------------------------|
| Registered company name | Impermitek                                |
| Address                 | 5031 53 Ave, Mundare, AB, T0B 3H0, Canada |
| Telephone               | +1 780 289 4542 or +1 780 906 4600        |
| Fax                     | Not Available                             |
| Website                 | www.impermitek.com                        |
| Email                   | technical@impermitek.com                  |

#### Emergency phone number

|                                   |                                |
|-----------------------------------|--------------------------------|
| Association / Organisation        | Canutec                        |
| Emergency telephone numbers       | 1-888-226-8832 (Canada and US) |
| Other emergency telephone numbers | 1-613-996-6666 (International) |

### SECTION 2 Hazard(s) identification

#### Classification of the substance or mixture

NFPA 704 diamond



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

|                |                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification | Flammable Liquids Category 2, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Reproductive Toxicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 3 |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### Label elements

|                     |        |
|---------------------|--------|
| Hazard pictogram(s) |        |
| Signal word         | Danger |

Single Ply / Plastic Primer

Hazard statement(s)

|      |                                                                                                |
|------|------------------------------------------------------------------------------------------------|
| H225 | Highly flammable liquid and vapour.                                                            |
| H315 | Causes skin irritation.                                                                        |
| H317 | May cause an allergic skin reaction.                                                           |
| H336 | May cause drowsiness or dizziness.                                                             |
| H361 | Suspected of damaging fertility or the unborn child.                                           |
| H373 | May cause damage to organs through prolonged or repeated exposure. (Skin) (Dermal, Inhalation) |
| H401 | Toxic to aquatic life.                                                                         |
| H412 | Harmful to aquatic life with long lasting effects.                                             |

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

|      |                                                                                                |
|------|------------------------------------------------------------------------------------------------|
| P201 | Obtain special instructions before use.                                                        |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P233 | Keep container tightly closed.                                                                 |
| P260 | Do not breathe mist/vapours/spray.                                                             |

Precautionary statement(s) Response

|           |                                                                                   |
|-----------|-----------------------------------------------------------------------------------|
| P308+P313 | IF exposed or concerned: Get medical advice/ attention.                           |
| P370+P378 | In case of fire: Use alcohol resistant foam or normal protein foam to extinguish. |
| P312      | Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.             |
| P314      | Get medical advice/attention if you feel unwell.                                  |

Precautionary statement(s) Storage

|           |                                                                  |
|-----------|------------------------------------------------------------------|
| P403+P235 | Store in a well-ventilated place. Keep cool.                     |
| P405      | Store locked up.                                                 |
| P403+P233 | Store in a well-ventilated place. Keep container tightly closed. |

Precautionary statement(s) Disposal

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

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

| CAS No      | %[weight] | Name                                                   |
|-------------|-----------|--------------------------------------------------------|
| 108-88-3    | 50-100    | <u>toluene</u>                                         |
| 123-86-4    | 10-25     | <u>n-butyl acetate</u>                                 |
| 123-42-2    | 2.5-10    | <u>diacetone alcohol</u>                               |
| 1330-20-7   | 2.5-10    | <u>xylene</u>                                          |
| 110-82-7    | 0.1-2.5   | <u>cyclohexane</u>                                     |
| 53880-05-0  | 1-2.5     | <u>isophorone diisocyanate homopolymer</u>             |
| 93763-34-9. | 0.1-2.5   | <u>hydrocarbons, C9-12, hydrotreated, dearomatised</u> |

SECTION 4 First-aid measures

Description of first aid measures

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eye Contact  | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"><li>▶ Immediately hold eyelids apart and flush the eye continuously with running water.</li><li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li><li>▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.</li><li>▶ Transport to hospital or doctor without delay.</li><li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li></ul> |
| Skin Contact | <p>If skin contact occurs:</p> <ul style="list-style-type: none"><li>▶ Immediately remove all contaminated clothing, including footwear.</li><li>▶ Flush skin and hair with running water (and soap if available).</li><li>▶ Seek medical attention in event of irritation.</li></ul>                                                                                                                                                                                                                                                                                                                                                                        |

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|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation | <ul style="list-style-type: none"> <li>▶ If fumes or combustion products are inhaled remove from contaminated area.</li> <li>▶ Lay patient down. Keep warm and rested.</li> <li>▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor, without delay.</li> </ul> <p>Following uptake by inhalation, move person to an area free from risk of further exposure. Oxygen or artificial respiration should be administered as needed. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. A physician should be consulted.</p> |
| Ingestion  | <ul style="list-style-type: none"> <li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> <li>▶ Avoid giving milk or oils.</li> <li>▶ Avoid giving alcohol.</li> </ul>                                                                                            |

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

See Section 11

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

Treat symptomatically.

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

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

Following acute or short term repeated exposures to toluene:

- ▶ Toluene is absorbed across the alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37 degrees C.) The concentration of toluene, in expired breath, is of the order of 18 ppm following sustained exposure to 100 ppm. The tissue/blood proportion is 1/3 except in adipose where the proportion is 8/10.
- ▶ Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid. This may be detected in the urine in amounts between 0.5 and 2.5 g/24 hr which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.
- ▶ Primary threat to life from ingestion and/or inhalation is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (eg cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO<sub>2</sub> < 50 mm Hg or pCO<sub>2</sub> > 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial damage has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenaline) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- ▶ Lavage is indicated in patients who require decontamination; ensure use.

## BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

| Determinant            | Index              | Sampling Time                   | Comments |
|------------------------|--------------------|---------------------------------|----------|
| o-Cresol in urine      | 0.5 mg/L           | End of shift                    | B        |
| Hippuric acid in urine | 1.6 g/g creatinine | End of shift                    | B, NS    |
| Toluene in blood       | 0.05 mg/L          | Prior to last shift of workweek |          |

NS: Non-specific determinant; also observed after exposure to other material

Continued...

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B: Background levels occur in specimens collected from subjects NOT exposed

SECTION 5 Fire-fighting measures

Extinguishing media

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

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 |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|

Special protective equipment and precautions for fire-fighters

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire Fighting         | <ul style="list-style-type: none"><li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li><li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li><li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li><li>▶ Use fire fighting procedures suitable for surrounding area.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Fire/Explosion Hazard | <ul style="list-style-type: none"><li>▶ Liquid and vapour are highly flammable.</li><li>▶ Severe fire hazard when exposed to heat, flame and/or oxidisers.</li><li>▶ Vapour may travel a considerable distance to source of ignition.</li><li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li></ul> <p>Combustion products include:<br/>carbon dioxide (CO2)<br/>isocyanates<br/>and minor amounts of<br/>hydrogen cyanide<br/>nitrogen oxides (NOx)<br/>other pyrolysis products typical of burning organic material.</p> <p><b>Contains low boiling substance:</b> Closed containers may rupture due to pressure buildup under fire conditions.<br/>When heated at high temperatures many isocyanates decompose rapidly generating a vapour which pressurises containers, possibly to the point of rupture. Release of toxic and/or flammable isocyanate vapours may then occur</p> |

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Minor Spills | <ul style="list-style-type: none"><li>▶ Remove all ignition sources.</li><li>▶ Clean up all spills immediately.</li><li>▶ Avoid breathing vapours and contact with skin and eyes.</li><li>▶ Control personal contact with the substance, by using protective equipment.</li></ul>                                                                                                                                                                                                                                |
| Major Spills | <ul style="list-style-type: none"><li>▶ Liquid Isocyanates and high isocyanate vapour concentrations will penetrate seals on self contained breathing apparatus - SCBA should be used inside encapsulating suit where this exposure may occur.</li><li>▶ Clear area of personnel and move upwind.</li><li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li><li>▶ May be violently or explosively reactive.</li><li>▶ Wear full body protective clothing with breathing apparatus.</li></ul> |

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

SECTION 7 Handling and storage

Precautions for safe handling

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Safe handling | <ul style="list-style-type: none"><li>▶ Containers, even those that have been emptied, may contain explosive vapours.</li><li>▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.</li></ul> <p><b>Contains low boiling substance:</b><br/>Storage in sealed containers may result in pressure buildup causing violent rupture of containers not rated appropriately.</p> <ul style="list-style-type: none"><li>▶ Check for bulging containers.</li><li>▶ Vent periodically</li><li>▶ Always release caps or seals slowly to ensure slow dissipation of vapours</li><li>· Electrostatic discharge may be generated during pumping - this may result in fire.</li><li>· Ensure electrical continuity by bonding and grounding (earthing) all equipment.</li><li>· Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (&lt;=1 m/sec until fill pipe submerged to twice its diameter, then &lt;= 7 m/sec).</li><li>· Avoid splash filling.<ul style="list-style-type: none"><li>▶ <b>DO NOT allow clothing wet with material to stay in contact with skin</b></li></ul></li></ul> |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Single Ply / Plastic Primer

## Other information

- ▶ Store in original containers.
- ▶ Keep containers securely sealed.
- ▶ Store in a cool, dry, well-ventilated area.
- ▶ Store away from incompatible materials and foodstuff containers.

## Conditions for safe storage, including any incompatibilities

## Suitable container

- ▶ Lined metal can, lined metal pail/ can.
- ▶ Plastic pail.
- ▶ Polyliner drum.
- ▶ Packing as recommended by manufacturer.

For low viscosity materials

- ▶ Drums and jerricans must be of the non-removable head type.
- ▶ 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) and solids (between 15 C deg. and 40 deg C.):

- ▶ Removable head packaging;
- ▶ Cans with friction closures and
- ▶ low pressure tubes and cartridges

may be used.

All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

## Storage incompatibility

n-Butyl acetate:

- ▶ 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

Diacetone alcohol: (DAA)

- ▶ reacts violently with strong oxidisers
- ▶ decomposes on contact with strong acids or strong bases forming acetone and mesityl oxide
- ▶ reacts with alkali metals forming explosive hydrogen
- ▶ is incompatible with aliphatic amines, isocyanates acetaldehyde, alkanolamines, ammonia, benzoyl peroxide, chromic acid, chromium trioxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus pentasulfide, pyridine tangerine oil, triethylammonium, triisobutylaluminium
- ▶ attacks some forms of plastics, resins, and rubber

NOTE: the commercial grade contains acetone

Storage containers made from brass, bronze or lead may cause contamination

Toluene:

- ▶ reacts violently with strong oxidisers, bromine, bromine trifluoride, chlorine, hydrochloric acid/ sulfuric acid mixture, 1,3-dichloro-5,5-dimethyl-2,4-imidazolidindione, dinitrogen tetraoxide, fluorine, concentrated nitric acid, nitrogen dioxide, silver chloride, sulfur dichloride, uranium fluoride, vinyl acetate
- ▶ forms explosive mixtures with strong acids, strong oxidisers, silver perchlorate, tetranitromethane
- ▶ is incompatible with bis-toluenediazo oxide
- ▶ attacks some plastics, rubber and coatings
- ▶ may generate electrostatic charges, due to low conductivity, on flow or agitation.

Xylenes:

- ▶ may ignite or explode in contact with strong oxidisers, 1,3-dichloro-5,5-dimethylhydantoin, uranium fluoride
- ▶ attack some plastics, rubber and coatings
- ▶ may generate electrostatic charges on flow or agitation due to low conductivity.
- ▶ Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
- ▶ Aromatics can react exothermically with bases and with diazo compounds.

For alkyl aromatics:

The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by oxidation at benzylic carbon as the intermediate formed is stabilised by resonance structure of the ring.

- ▶ Following reaction with oxygen and under the influence of sunlight, a hydroperoxide at the alpha-position to the aromatic ring, is the primary oxidation product formed (provided a hydrogen atom is initially available at this position) - this product is often short-lived but may be stable dependent on the nature of the aromatic substitution; a secondary C-H bond is more easily attacked than a primary C-H bond whilst a tertiary C-H bond is even more susceptible to attack by oxygen
- ▶ Monoalkylbenzenes may subsequently form monocarboxylic acids; alkyl naphthalenes mainly produce the corresponding naphthalene carboxylic acids.
- ▶ Oxidation in the presence of transition metal salts not only accelerates but also selectively decomposes the hydroperoxides.
- ▶ 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.
- ▶ Avoid strong acids, bases.

Avoid reaction with water, alcohols and detergent solutions. Isocyanates are electrophiles, and as such they are reactive toward a variety of nucleophiles including alcohols, amines, and even water. Upon treatment with an alcohol, an isocyanate forms a urethane linkage. If a di-isocyanate is treated with a compound containing two or more hydroxyl groups, such as a diol or a polyol, polymer chains are formed, which are known as polyurethanes.

- ▶ A range of exothermic decomposition energies for isocyanates is given as 20-30 kJ/mol.
- ▶ The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment.
- ▶ For example, in 'open vessel processes' (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in 'closed vessel processes' (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g.

BREThERICK: Handbook of Reactive Chemical Hazards, 4th Edition

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

Continued...

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INGREDIENT DATA

| Source                                               | Ingredient        | Material name                                      | TWA                  | STEL                | Peak             | Notes         |
|------------------------------------------------------|-------------------|----------------------------------------------------|----------------------|---------------------|------------------|---------------|
| US OSHA Permissible Exposure Limits (PELs) Table Z-2 | toluene           | Toluene                                            | 200 ppm              | 300 ppm             | 500 (10 min) ppm | (Z37.12-1967) |
| US NIOSH Recommended Exposure Limits (RELs)          | toluene           | Toluene                                            | 100 ppm / 375 mg/m3  | 560 mg/m3 / 150 ppm | Not Available    | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | n-butyl acetate   | n-Butyl-acetate                                    | 150 ppm / 710 mg/m3  | Not Available       | Not Available    | Not Available |
| US NIOSH Recommended Exposure Limits (RELs)          | n-butyl acetate   | n-Butyl acetate                                    | 150 ppm / 710 mg/m3  | 950 mg/m3 / 200 ppm | Not Available    | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | diacetone alcohol | Diacetone alcohol (4-Hydroxy-4-methyl-2-pentanone) | 50 ppm / 240 mg/m3   | Not Available       | Not Available    | Not Available |
| US NIOSH Recommended Exposure Limits (RELs)          | diacetone alcohol | Diacetone alcohol                                  | 50 ppm / 240 mg/m3   | Not Available       | Not Available    | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | xylene            | Xylenes (o-, m-, p-isomers)                        | 100 ppm / 435 mg/m3  | Not Available       | Not Available    | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | cyclohexane       | Cyclohexane                                        | 300 ppm / 1050 mg/m3 | Not Available       | Not Available    | Not Available |
| US NIOSH Recommended Exposure Limits (RELs)          | cyclohexane       | Cyclohexane                                        | 300 ppm / 1050 mg/m3 | Not Available       | Not Available    | Not Available |

Emergency Limits

| Ingredient        | TEEL-1        | TEEL-2        | TEEL-3        |
|-------------------|---------------|---------------|---------------|
| toluene           | Not Available | Not Available | Not Available |
| n-butyl acetate   | Not Available | Not Available | Not Available |
| diacetone alcohol | 150 ppm       | 350 ppm       | 2100* ppm     |
| xylene            | Not Available | Not Available | Not Available |
| cyclohexane       | 300 ppm       | 1700* ppm     | 10000** ppm   |

| Ingredient                                      | Original IDLH | Revised IDLH  |
|-------------------------------------------------|---------------|---------------|
| toluene                                         | 500 ppm       | Not Available |
| n-butyl acetate                                 | 1,700 ppm     | Not Available |
| diacetone alcohol                               | 1,800 ppm     | Not Available |
| xylene                                          | 900 ppm       | Not Available |
| cyclohexane                                     | 1,300 ppm     | Not Available |
| isophorone diisocyanate homopolymer             | Not Available | Not Available |
| hydrocarbons, C9-12, hydrotreated, dearomatised | Not Available | Not Available |

Occupational Exposure Banding

| Ingredient                                      | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|-------------------------------------------------|-----------------------------------|----------------------------------|
| isophorone diisocyanate homopolymer             | D                                 | > 0.1 to ≤ 1 ppm                 |
| hydrocarbons, C9-12, hydrotreated, dearomatised | E                                 | ≤ 0.1 ppm                        |

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

Exposure controls

|                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard 'physically' away from the worker and ventilation that strategically 'adds' and 'removes' air in the work environment. |
| Individual protection measures, such as personal protective equipment |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Eye and face protection                                               | <ul style="list-style-type: none"><li>▶ Safety glasses with side shields.</li><li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li><li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.</li></ul>                                                                                                                                                                                                                                             |
| Skin protection                                                       | See Hand protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Single Ply / Plastic Primer

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hands/feet protection</b> | <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.</li> <li>▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.</li> </ul> <p>For esters:</p> <ul style="list-style-type: none"> <li>▶ Do NOT use natural rubber, butyl rubber, EPDM or polystyrene-containing materials.</li> </ul> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care.</p> <ul style="list-style-type: none"> <li>▶ Isocyanate resistant materials include Teflon, Viton, nitrile rubber and some PVA gloves.</li> <li>▶ Protective gloves and overalls should be worn as specified in the appropriate national standard.</li> <li>▶ Contaminated garments should be removed promptly and should not be re-used until they have been decontaminated.</li> <li>▶ NOTE: Natural rubber, neoprene, PVC can be affected by isocyanates</li> </ul> |
| <b>Body protection</b>       | See Other protection below                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Other protection</b>      | <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ Eyewash unit.</li> <li>▶ Barrier cream.</li> <li>▶ Skin cleansing cream.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

**Respiratory protection**

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

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

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

|                                                     |                                     |                                                |                                    |
|-----------------------------------------------------|-------------------------------------|------------------------------------------------|------------------------------------|
| <b>Appearance</b>                                   | Yellow                              |                                                |                                    |
| <b>Physical state</b>                               | Liquid                              | <b>Relative density (Water = 1)</b>            | 0.9                                |
| <b>Odour</b>                                        | Not Available                       | <b>Partition coefficient n-octanol / water</b> | Not Available                      |
| <b>Odour threshold</b>                              | Not Available                       | <b>Auto-ignition temperature (°C)</b>          | 370(n-butyl acetate)               |
| <b>pH (as supplied)</b>                             | Not Available                       | <b>Decomposition temperature (°C)</b>          | Not Available                      |
| <b>Melting point / freezing point (°C)</b>          | Not Available                       | <b>Viscosity (cSt)</b>                         | Kinematic 10 s @ 20oC              |
| <b>Initial boiling point and boiling range (°C)</b> | 81 (Cyclohexane)                    | <b>Molecular weight (g/mol)</b>                | Not Available                      |
| <b>Flash point (°C)</b>                             | -18 (Cyclohexane)                   | <b>Taste</b>                                   | Not Available                      |
| <b>Evaporation rate</b>                             | Not Available                       | <b>Explosive properties</b>                    | Highly flammable liquid and vapour |
| <b>Flammability</b>                                 | HIGHLY FLAMMABLE.                   | <b>Oxidising properties</b>                    | Not Available                      |
| <b>Upper Explosive Limit (%)</b>                    | 7.5% Vol (n-butyl acetate)          | <b>Surface Tension (dyn/cm or mN/m)</b>        | Not Available                      |
| <b>Lower Explosive Limit (%)</b>                    | 1.2% Vol (n-butyl acetate, toluene) | <b>Volatile Component (%vol)</b>               | Not Available                      |
| <b>Vapour pressure (kPa)</b>                        | 29 hPa (toluene)                    | <b>Gas group</b>                               | Not Available                      |
| <b>Solubility in water</b>                          | Immiscible                          | <b>pH as a solution (1%)</b>                   | Not Available                      |
| <b>Vapour density (Air = 1)</b>                     | Not Available                       | <b>VOC g/L</b>                                 | Not Available                      |

**SECTION 10 Stability and reactivity**

|                                           |                                                                                                                                                                                                      |
|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | See section 7                                                                                                                                                                                        |
| <b>Chemical stability</b>                 | <ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul> |
| <b>Possibility of hazardous reactions</b> | See section 7                                                                                                                                                                                        |

Continued...

## Single Ply / Plastic Primer

|                                         |               |
|-----------------------------------------|---------------|
| <b>Conditions to avoid</b>              | See section 7 |
| <b>Incompatible materials</b>           | See section 7 |
| <b>Hazardous decomposition products</b> | See section 5 |

## SECTION 11 Toxicological information

## Information on toxicological effects

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhaled</b>      | <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce toxic effects. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>The main effects of simple esters are irritation, stupor and insensibility. Headache, drowsiness, dizziness, coma and behavioural changes may occur.</p> <p>Diacetone alcohol is primarily a sedative, used to stop convulsions. When inhaled, it may cause sleep after a period of restlessness, excitability, and irritation. Symptoms of intoxication are rapidly decreasing breathing, marked fall in blood pressure, muscle relaxation and absence of conjunctival reflexes.</p> <p>The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure.</p> <p>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.</p> <p>Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.</p> <p>The acute toxicity of inhaled alkylbenzene is best described by central nervous system depression. These compounds may also act as general anaesthetics. Whole body symptoms of poisoning include light-headedness, nervousness, apprehension, a feeling of well-being, confusion, dizziness, drowsiness, ringing in the ears, blurred or double vision, vomiting and sensations of heat, cold or numbness, twitching, tremors, convulsions, unconsciousness, depression of breathing, and arrest. Heart stoppage may result from cardiovascular collapse.</p> <p>Headache, fatigue, tiredness, irritability and digestive disturbances (nausea, loss of appetite and bloating) are the most common symptoms of xylene overexposure. Injury to the heart, liver, kidneys and nervous system has also been noted amongst workers.</p> <p>Xylene is a central nervous system depressant</p> |
| <b>Ingestion</b>    | <p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.</p> <p>At sufficiently high doses the material may be hepatotoxic (i.e. poisonous to the liver).</p> <p>At sufficiently high doses the material may be nephrotoxic (i.e. poisonous to the kidney).</p> <p>Diacetone alcohol produces marked respiratory depression and unconsciousness. It may cause destruction of the red cells, liver and kidney damage and anaemia.</p> <p>Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)</p> <p>Considered an unlikely route of entry in commercial/industrial environments. The liquid may produce gastrointestinal discomfort and may be harmful if swallowed.</p> <p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Skin Contact</b> | <p>The material may accentuate any pre-existing dermatitis condition</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 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> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Eye</b>          | <p>The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.</p> <p>There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Chronic</b>      | <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Ample evidence exists that this material directly causes reduced fertility</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Intentional abuse (glue sniffing) or occupational exposure to toluene can result in chronic habituation. Chronic abuse has caused inco-ordination, tremors of the extremities (due to widespread cerebrum withering), headache, abnormal speech, temporary memory loss, convulsions, coma, drowsiness, reduced colour perception, blindness, nystagmus (rapid, involuntary eye movements), hearing loss leading to deafness and mild dementia.</p> <p>Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates.</p> <p>The chemistry of reaction of isocyanates, as evidenced by MDI, in biological milieu is such that in the event of a true exposure of small MDI doses to the mouth, reactions will commence at once with biological macromolecules in the buccal region and will continue along the digestive tract prior to reaching the stomach. Reaction products will be a variety of polyureas and macromolecular conjugates with for example mucus, proteins and cell components.</p> <p>This is corroborated by the results from an MDI inhalation study.</p> <p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

Continued...

## Single Ply / Plastic Primer

Women exposed to xylene in the first 3 months of pregnancy showed a slightly increased risk of miscarriage and birth defects. Evaluation of workers chronically exposed to xylene has demonstrated lack of genetic toxicity.  
Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

|                                                 |                                                    |  |                                                                  |  |
|-------------------------------------------------|----------------------------------------------------|--|------------------------------------------------------------------|--|
| Single Ply / Plastic Primer                     | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Not Available                                      |  | Not Available                                                    |  |
| toluene                                         | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Dermal (rabbit) LD50: 12124 mg/kg <sup>[2]</sup>   |  | Eye (rabbit): 2mg/24h - SEVERE                                   |  |
|                                                 | Inhalation (Rat) LC50: >13350 ppm4h <sup>[2]</sup> |  | Eye (rabbit):0.87 mg - mild                                      |  |
|                                                 | Oral (Rat) LD50: 636 mg/kg <sup>[2]</sup>          |  | Eye (rabbit):100 mg/30sec - mild                                 |  |
|                                                 |                                                    |  | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |  |
|                                                 |                                                    |  | Skin (rabbit):20 mg/24h-moderate                                 |  |
|                                                 |                                                    |  | Skin (rabbit):500 mg - moderate                                  |  |
|                                                 |                                                    |  | Skin: adverse effect observed (irritating) <sup>[1]</sup>        |  |
| n-butyl acetate                                 | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Dermal (rabbit) LD50: 3200 mg/kg <sup>[2]</sup>    |  | Eye (human): 300 mg * [PPG]                                      |  |
|                                                 | Inhalation (Rat) LC50: 0.74 mg/l4h <sup>[2]</sup>  |  | Eye (rabbit): 20 mg (open)-SEVERE                                |  |
|                                                 | Oral (Rabbit) LD50: 3200 mg/kg <sup>[2]</sup>      |  | Eye (rabbit): 20 mg/24h - moderate                               |  |
|                                                 |                                                    |  | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |  |
|                                                 |                                                    |  | Skin (rabbit): 500 mg/24h-moderate                               |  |
| diacetone alcohol                               | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Dermal (rabbit) LD50: 13500 mg/kg <sup>[2]</sup>   |  | Eye (human): 100 ppm/15 mins.                                    |  |
|                                                 | Oral (Rat) LD50: 2520 mg/kg <sup>[2]</sup>         |  | Eye (rabbit): 5 mg SEVERE                                        |  |
|                                                 |                                                    |  | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |  |
|                                                 |                                                    |  | Skin (rabbit): 500 mg open mild                                  |  |
|                                                 |                                                    |  | Skin: adverse effect observed (irritating) <sup>[1]</sup>        |  |
| xylene                                          | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Dermal (rabbit) LD50: >1700 mg/kg <sup>[2]</sup>   |  | Eye (human): 200 ppm irritant                                    |  |
|                                                 | Inhalation (Rat) LC50: 5000 ppm4h <sup>[2]</sup>   |  | Eye (rabbit): 5 mg/24h SEVERE                                    |  |
|                                                 | Oral (Mouse) LD50: 2119 mg/kg <sup>[2]</sup>       |  | Eye (rabbit): 87 mg mild                                         |  |
|                                                 |                                                    |  | Eye: adverse effect observed (irritating) <sup>[1]</sup>         |  |
|                                                 |                                                    |  | Skin (rabbit):500 mg/24h moderate                                |  |
| cyclohexane                                     | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>   |  | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |  |
|                                                 | Inhalation (Rat) LC50: >5540 ppm4h <sup>[1]</sup>  |  | Skin(rabbit): 1548 mg/48hr - mild                                |  |
|                                                 | Oral (Rat) LD50: 12705 mg/kg <sup>[2]</sup>        |  | Skin: adverse effect observed (irritating) <sup>[1]</sup>        |  |
| isophorone diisocyanate homopolymer             | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Inhalation (Rat) LC50: 3.538 mg/L4h <sup>[1]</sup> |  | Eye: no adverse effect observed (not irritating) <sup>[1]</sup>  |  |
|                                                 | Oral (Rat) LD50: 5000 mg/kg <sup>[1]</sup>         |  | Skin: adverse effect observed (irritating) <sup>[1]</sup>        |  |
|                                                 |                                                    |  | Skin: no adverse effect observed (not irritating) <sup>[1]</sup> |  |
| hydrocarbons, C9-12, hydrotreated, dearomatised | <b>TOXICITY</b>                                    |  | <b>IRRITATION</b>                                                |  |
|                                                 | Not Available                                      |  | Not Available                                                    |  |

## Single Ply / Plastic Primer

|                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                 |   |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---|
| <b>Legend:</b>                                                                                                           | 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                 |   |
| <b>Single Ply / Plastic Primer</b>                                                                                       | <p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.</p> <p>Data demonstrate that during inhalation exposure, aromatic hydrocarbons undergo substantial partitioning into adipose tissues. Following cessation of exposure, the level of aromatic hydrocarbons in body fats rapidly declines. Thus, the aromatic hydrocarbons are unlikely to bioaccumulate in the body. Selective partitioning of the aromatic hydrocarbons into the non-adipose tissues is unlikely.</p>                                                                                                                                                    |                                 |   |
| <b>DIACETONE ALCOHOL</b>                                                                                                 | <p>Inhalation (human) TCLo: 400 ppm resp.effect</p> <p>Diacetone alcohol (DAA) is irritating to the skin and eyes, but the oral lethal dose is more than 4000mg/kg. Animal testing showed some effects to the kidney and liver. It has not been shown to cause reproductive or developmental toxicity or genetic damage, but it may reduce fertility.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |   |
| <b>XYLENE</b>                                                                                                            | <p>Reproductive effector in rats</p> <p>The substance is classified by IARC as Group 3:<br/><b>NOT</b> classifiable as to its carcinogenicity to humans.<br/>Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |   |
| <b>CYCLOHEXANE</b>                                                                                                       | Bacteria mutagen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |   |
| <b>ISOPHORONE DIISOCYANATE HOMOPOLYMER</b>                                                                               | Isocyanate vapours are irritating to the airways and can cause their inflammation, with wheezing, gasping, severe distress, even loss of consciousness and fluid in the lungs. Nervous system symptoms that may occur include headache, sleep disturbance, euphoria, inco-ordination, anxiety, depression and paranoia.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |   |
| <b>HYDROCARBONS, C9-12, HYDROTREATED, DEAROMATISED</b>                                                                   | <p>Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.</p> <p>The major classes of hydrocarbons are well absorbed into the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with fats in the diet. Some hydrocarbons may appear unchanged as in the lipoprotein particles in the gut lymph, but most hydrocarbons partly separate from fats and undergo metabolism in the gut cell.</p> <p>Kerosene may produce varying ranges of skin irritation, and a reversible eye irritation (if eyes are washed). Skin may be cracked or flaky and/or leathery, with crusts and/or hair loss. It may worsen skin cancers. There may also be loss of weight, discharge from the nose, excessive tiredness, and wheezing.</p>                                                                                                                                                                                                               |                                 |   |
| <b>Single Ply / Plastic Primer &amp; ISOPHORONE DIISOCYANATE HOMOPOLYMER</b>                                             | <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                 |   |
| <b>Single Ply / Plastic Primer &amp; N-BUTYL ACETATE</b>                                                                 | <p>Generally, linear and branched-chain alkyl esters are hydrolysed to their component alcohols and carboxylic acids in the intestinal tract, blood and most tissues throughout the body. Following hydrolysis the component alcohols and carboxylic acids are metabolized</p> <p>Oral acute toxicity studies have been reported for 51 of the 67 esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids. The very low oral acute toxicity of this group of esters is demonstrated by oral LD50 values greater than 1850 mg/kg bw</p> <p>Genotoxicity studies have been performed in vitro using the following esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids: methyl acetate, butyl acetate, butyl stearate and the structurally related isoamyl formate and demonstrates that these substances are not genotoxic.</p> <p>The JEFCA Committee concluded that the substances in this group would not present safety concerns at the current levels of intake the esters of aliphatic acyclic primary alcohols and aliphatic linear saturated carboxylic acids are generally used as flavouring substances up to average maximum levels of 200 mg/kg. Higher levels of use (up to 3000 mg/kg) are permitted in food categories such as chewing gum and hard candy.</p> |                                 |   |
| <b>Single Ply / Plastic Primer &amp; TOLUENE</b>                                                                         | <p>For toluene:</p> <p>Acute toxicity: Humans exposed to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis (sleepiness) and death. When inhaled or swallowed, toluene can cause severe central nervous system depression, and in large doses has a narcotic effect. 60mL has caused death. Death of heart muscle fibres, liver swelling, congestion and bleeding of the lungs and kidney injury were all found on autopsy.</p> <p>Exposure to inhalation at a concentration of 600 parts per million for 8 hours resulted in the same and more serious symptoms including euphoria (a feeling of well-being), dilated pupils, convulsions and nausea.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                 |   |
| <b>TOLUENE &amp; N-BUTYL ACETATE &amp; DIACETONE ALCOHOL &amp; XYLENE</b>                                                | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                 |   |
| <b>N-BUTYL ACETATE &amp; DIACETONE ALCOHOL &amp; XYLENE</b>                                                              | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                 |   |
| <b>DIACETONE ALCOHOL &amp; ISOPHORONE DIISOCYANATE HOMOPOLYMER &amp; HYDROCARBONS, C9-12, HYDROTREATED, DEAROMATISED</b> | No significant acute toxicological data identified in literature search.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                 |   |
| <b>Acute Toxicity</b>                                                                                                    | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Carcinogenicity</b>          | ✗ |
| <b>Skin Irritation/Corrosion</b>                                                                                         | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Reproductivity</b>           | ✓ |
| <b>Serious Eye Damage/Irritation</b>                                                                                     | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>STOT - Single Exposure</b>   | ✓ |
| <b>Respiratory or Skin sensitisation</b>                                                                                 | ✓                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>STOT - Repeated Exposure</b> | ✓ |
| <b>Mutagenicity</b>                                                                                                      | ✗                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Aspiration Hazard</b>        | ✗ |

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

Continued...

Single Ply / Plastic Primer

SECTION 12 Ecological information

Toxicity

|                                                 |               |                                                                                                                                                                                                                                                                                                                          |                               |               |               |
|-------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|---------------|---------------|
| Single Ply / Plastic Primer                     | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | Not Available | Not Available                                                                                                                                                                                                                                                                                                            | Not Available                 | Not Available | Not Available |
| toluene                                         | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | EC50          | 72h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | 12.5mg/L      | 4             |
|                                                 | LC50          | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | 5-35mg/l      | 4             |
|                                                 | EC50          | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | 3.78mg/L      | 5             |
|                                                 | NOEC(ECx)     | 168h                                                                                                                                                                                                                                                                                                                     | Crustacea                     | 0.74mg/l      | 2             |
|                                                 | EC50          | 96h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | >376.71mg/L   | 4             |
| n-butyl acetate                                 | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | LC50          | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | 17-19mg/L     | 4             |
|                                                 | EC50          | 72h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | 246mg/l       | 2             |
|                                                 | EC50          | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | 32mg/l        | 1             |
|                                                 | EC50(ECx)     | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | 18mg/l        | 2             |
| diacetone alcohol                               | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | LC50          | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | >100mg/l      | 2             |
|                                                 | EC50          | 72h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | >1000mg/l     | 2             |
|                                                 | EC50          | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | >1000mg/l     | 2             |
|                                                 | NOEC(ECx)     | 504h                                                                                                                                                                                                                                                                                                                     | Crustacea                     | 100mg/l       | 2             |
| xylene                                          | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | LC50          | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | 2.6mg/l       | 2             |
|                                                 | EC50          | 72h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | 4.6mg/l       | 2             |
|                                                 | EC50          | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | 1.8mg/l       | 2             |
|                                                 | NOEC(ECx)     | 73h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | 0.44mg/l      | 2             |
| cyclohexane                                     | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | LC50          | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | 4.53mg/l      | 2             |
|                                                 | EC50          | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | 0.9mg/l       | 2             |
|                                                 | BCF           | 1344h                                                                                                                                                                                                                                                                                                                    | Fish                          | 31-102        | 7             |
|                                                 | EC50          | 72h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | 3.428mg/l     | 2             |
|                                                 | EC50(ECx)     | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | 0.9mg/l       | 2             |
|                                                 | EC50          | 96h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | 2.17mg/l      | 2             |
| isophorone diisocyanate homopolymer             | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | NOEC(ECx)     | 816h                                                                                                                                                                                                                                                                                                                     | Fish                          | >=0.033mg/l   | 2             |
|                                                 | EC50          | 72h                                                                                                                                                                                                                                                                                                                      | Algae or other aquatic plants | >3.1mg/l      | 2             |
|                                                 | EC50          | 48h                                                                                                                                                                                                                                                                                                                      | Crustacea                     | >3.36mg/l     | 2             |
|                                                 | LC50          | 96h                                                                                                                                                                                                                                                                                                                      | Fish                          | >1.51mg/l     | 2             |
| hydrocarbons, C9-12, hydrotreated, dearomatised | Endpoint      | Test Duration (hr)                                                                                                                                                                                                                                                                                                       | Species                       | Value         | Source        |
|                                                 | Not Available | Not Available                                                                                                                                                                                                                                                                                                            | Not Available                 | Not Available | Not Available |
| Legend:                                         |               | Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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 |                               |               |               |

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Aromatic Substances Series:

Environmental Fate: Large, molecularly complex polycyclic aromatic hydrocarbons, or PAHs, are persistent in the environment longer than smaller PAHs.

Atmospheric Fate: PAHs are 'semi-volatile substances' which can move between the atmosphere and the Earth's surface in repeated, temperature-driven cycles of deposition and volatilization. Terrestrial Fate: BTEX compounds have the potential to move through soil and contaminate ground water, and their vapors are highly flammable and explosive.

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Ecotoxicity - Within an aromatic series, acute toxicity increases with increasing alkyl substitution on the aromatic nucleus.

For Diacetone Alcohol: log Kow: -0.14 @ 25 C; BOD 5: 0.07,3%; COD: 2.11,95%; ThOD: 2.21.

Environmental Fate: If diacetone alcohol is released into air and soil, it is unlikely to be distributed in other compartments. Diacetone alcohol is readily biodegradable.

Atmospheric Fate: Direct photodegradation is not expected.

For Xylenes:

log Koc : 2.05-3.08; Koc : 25.4-204; Half-life (hr) air : 0.24-42; Half-life (hr) H2O surface water : 24-672; Half-life (hr) H2O ground : 336-8640; Half-life (hr) soil : 52-672; Henry's Pa m3 /mol : 637-879; Henry's atm m3 /mol - 7.68E-03; BOD 5 if unstated - 1.4,1%; COD - 2.56,13% ThOD - 3.125 : BCF : 23; log BCF : 1.17-2.41.

Environmental Fate: Most xylenes released to the environment will occur in the atmosphere and volatilisation is the dominant environmental fate process. Soil - Xylenes are expected to have moderate mobility in soil evaporating rapidly from soil surfaces. The extent of the degradation is expected to depend on its concentration, residence time in the soil, the nature of the soil, and whether resident microbial populations have been acclimated.

For Toluene:

log Kow : 2.1-3;  
log Koc : 1.12-2.85;  
Koc : 37-260;  
log Kom : 1.39-2.89;  
Half-life (hr) air : 2.4-104;  
Half-life (hr) H2O surface water : 5.55-528;  
Half-life (hr) H2O ground : 168-2628;  
Half-life (hr) soil : <48-240;  
Henry's Pa m3 /mol : 518-694;  
Henry's atm m3 /mol : 5.94;  
E-03BOD 5 0.86-2.12, 5%COD - 0.7-2.52,21-27%;  
ThOD - 3.13 ; BCF - 1.67-380;  
log BCF - 0.22-3.28.

Atmospheric Fate: The majority of toluene evaporates to the atmosphere from the water and soil. The main degradation pathway for toluene in the atmosphere is reaction with photochemically produced hydroxyl radicals. The estimated atmospheric half life for toluene is about 13 hours.

For n-Butyl Acetate:

Koc: ~200;  
log Kow: 1.78;  
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 - Butyl acetate is expected to have moderate mobility in soil. Volatilization of n-butyl acetate is expected from moist and dry soil surfaces. n-Butyl acetate may biodegrade in soil.

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

Persistence and degradability

| Ingredient                          | Persistence: Water/Soil     | Persistence: Air            |
|-------------------------------------|-----------------------------|-----------------------------|
| toluene                             | LOW (Half-life = 28 days)   | LOW (Half-life = 4.33 days) |
| n-butyl acetate                     | LOW                         | LOW                         |
| diacetone alcohol                   | HIGH                        | HIGH                        |
| xylene                              | HIGH (Half-life = 360 days) | LOW (Half-life = 1.83 days) |
| cyclohexane                         | HIGH (Half-life = 360 days) | LOW (Half-life = 3.63 days) |
| isophorone diisocyanate homopolymer | HIGH                        | HIGH                        |

Bioaccumulative potential

| Ingredient                          | Bioaccumulation          |
|-------------------------------------|--------------------------|
| toluene                             | LOW (BCF = 90)           |
| n-butyl acetate                     | LOW (BCF = 14)           |
| diacetone alcohol                   | LOW (LogKOW = -0.3376)   |
| xylene                              | MEDIUM (BCF = 740)       |
| cyclohexane                         | LOW (BCF = 242)          |
| isophorone diisocyanate homopolymer | MEDIUM (LogKOW = 4.2608) |

Mobility in soil

| Ingredient                          | Mobility              |
|-------------------------------------|-----------------------|
| toluene                             | LOW (Log KOC = 268)   |
| n-butyl acetate                     | LOW (Log KOC = 20.86) |
| diacetone alcohol                   | HIGH (Log KOC = 1)    |
| cyclohexane                         | LOW (Log KOC = 165.5) |
| isophorone diisocyanate homopolymer | LOW (Log KOC = 19770) |

SECTION 13 Disposal considerations

Waste treatment methods

|                              |                                                                      |
|------------------------------|----------------------------------------------------------------------|
| Product / Packaging disposal | ► Containers may still present a chemical hazard/ danger when empty. |
|------------------------------|----------------------------------------------------------------------|

Continued...

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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <div>▶ Return to supplier for reuse/ recycling if possible.</div> <div>Otherwise:</div> <div>▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</div> <div>▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product.</div> <div>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.</div> <div>A Hierarchy of Controls seems to be common - the user should investigate:</div> <div>▶ Reduction</div> <div>▶ Reuse</div> <div>▶ Recycling</div> <div>▶ Disposal (if all else fails)</div> <div>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</div> <div>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></div> <div>▶ It may be necessary to collect all wash water for treatment before disposal.</div> <div>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</div> <div>▶ Where in doubt contact the responsible authority.</div> <div>▶ <b>DO NOT recycle spilled material.</b></div> <div>▶ Consult State Land Waste Management Authority for disposal.</div> <div>▶ Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal.</div> <div>▶ <b>DO NOT seal or stopper drums being decontaminated as CO2 gas is generated and may pressurise containers.</b></div> |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

SECTION 14 Transport information

Labels Required

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

Shipping container, transport vehicle placarding, and labeling may vary from the below information. This depends on the quantity shipped, the applicability of excepted quantity requirements, limited quantity requirements, and/or special provisions according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT)

|                                    |                                                                                         |                                              |
|------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------|
| 14.1. UN number or ID number       | 1263                                                                                    |                                              |
| 14.2. UN proper shipping name      | Paint related material including paint thinning, drying, removing, or reducing compound |                                              |
| 14.3. Transport hazard class(es)   | Class                                                                                   | 3                                            |
|                                    | Subsidiary Hazard                                                                       | Not Applicable                               |
| 14.4. Packing group                | II                                                                                      |                                              |
| 14.5. Environmental hazard         | Not Applicable                                                                          |                                              |
| 14.6. Special precautions for user | Hazard Label                                                                            | 3                                            |
|                                    | Special provisions                                                                      | 149, 367, B52, B131, IB2, T4, TP1, TP8, TP28 |

Air transport (ICAO-IATA / DGR)

|                                    |                                                                         |                |
|------------------------------------|-------------------------------------------------------------------------|----------------|
| 14.1. UN number                    | 1263                                                                    |                |
| 14.2. UN proper shipping name      | Paint related material (including paint thinning or reducing compounds) |                |
| 14.3. Transport hazard class(es)   | ICAO/IATA Class                                                         | 3              |
|                                    | ICAO / IATA Subsidiary Hazard                                           | Not Applicable |
|                                    | ERG Code                                                                | 3L             |
| 14.4. Packing group                | II                                                                      |                |
| 14.5. Environmental hazard         | Not Applicable                                                          |                |
| 14.6. Special precautions for user | Special provisions                                                      | A3 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)

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|                                    |                                                                        |                |
|------------------------------------|------------------------------------------------------------------------|----------------|
| 14.1. UN number                    | 1263                                                                   |                |
| 14.2. UN proper shipping name      | PAINT RELATED MATERIAL (including paint thinning or reducing compound) |                |
| 14.3. Transport hazard class(es)   | IMDG Class                                                             | 3              |
|                                    | IMDG Subsidiary Hazard                                                 | Not Applicable |
| 14.4. Packing group                | II                                                                     |                |
| 14.5. Environmental hazard         | Not Applicable                                                         |                |
| 14.6. Special precautions for user | EMS Number                                                             | F-E , S-E      |
|                                    | Special provisions                                                     | 163 367        |
|                                    | Limited Quantities                                                     | 5 L            |

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

Not Applicable

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

| Product name                                    | Group         |
|-------------------------------------------------|---------------|
| toluene                                         | Not Available |
| n-butyl acetate                                 | Not Available |
| diacetone alcohol                               | Not Available |
| xylene                                          | Not Available |
| cyclohexane                                     | Not Available |
| isophorone diisocyanate homopolymer             | Not Available |
| hydrocarbons, C9-12, hydrotreated, dearomatised | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name                                    | Ship Type     |
|-------------------------------------------------|---------------|
| toluene                                         | Not Available |
| n-butyl acetate                                 | Not Available |
| diacetone alcohol                               | Not Available |
| xylene                                          | Not Available |
| cyclohexane                                     | Not Available |
| isophorone diisocyanate homopolymer             | Not Available |
| hydrocarbons, C9-12, hydrotreated, dearomatised | Not Available |

SECTION 15 Regulatory information

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

toluene is found on the following regulatory lists

- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
- US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
- US - California Proposition 65 - Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity
- US - California Proposition 65 - Reproductive Toxicity
- US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
- US - Massachusetts - Right To Know Listed Chemicals
- US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)
- US Clean Air Act - Hazardous Air Pollutants
- US CWA (Clean Water Act) - List of Hazardous Substances
- US CWA (Clean Water Act) - Priority Pollutants
- US CWA (Clean Water Act) - Toxic Pollutants
- US DOE Temporary Emergency Exposure Limits (TEELs)
- US Drug Enforcement Administration (DEA) List I and II Regulated Chemicals
- US EPA Integrated Risk Information System (IRIS)
- US EPCRA Section 313 Chemical List
- US NIOSH Recommended Exposure Limits (RELs)
- US OSHA Permissible Exposure Limits (PELs) Table Z-2
- US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

n-butyl acetate is found on the following regulatory lists

- US - Massachusetts - Right To Know Listed Chemicals
- US CWA (Clean Water Act) - List of Hazardous Substances

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|                                                                       |
|-----------------------------------------------------------------------|
| US DOE Temporary Emergency Exposure Limits (TEELs)                    |
| US NIOSH Recommended Exposure Limits (RELs)                           |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1                  |
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US TSCA Section 4/12 (b) - Sunset Dates/Status                        |

diacetone alcohol is found on the following regulatory lists

|                                                                       |
|-----------------------------------------------------------------------|
| US - Massachusetts - Right To Know Listed Chemicals                   |
| US DOE Temporary Emergency Exposure Limits (TEELs)                    |
| US NIOSH Recommended Exposure Limits (RELs)                           |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1                  |
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US TSCA Section 4/12 (b) - Sunset Dates/Status                        |

xylene is found on the following regulatory lists

|                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------|
| International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic |
| US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants                                                  |
| US - Massachusetts - Right To Know Listed Chemicals                                                                            |
| US ATSDR Minimal Risk Levels for Hazardous Substances (MRLs)                                                                   |
| US Clean Air Act - Hazardous Air Pollutants                                                                                    |
| US CWA (Clean Water Act) - List of Hazardous Substances                                                                        |
| US DOE Temporary Emergency Exposure Limits (TEELs)                                                                             |
| US EPA Integrated Risk Information System (IRIS)                                                                               |
| US EPCRA Section 313 Chemical List                                                                                             |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1                                                                           |
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory                                                          |

cyclohexane is found on the following regulatory lists

|                                                                       |
|-----------------------------------------------------------------------|
| US - Massachusetts - Right To Know Listed Chemicals                   |
| US CWA (Clean Water Act) - List of Hazardous Substances               |
| US DOE Temporary Emergency Exposure Limits (TEELs)                    |
| US EPA Integrated Risk Information System (IRIS)                      |
| US EPCRA Section 313 Chemical List                                    |
| US NIOSH Recommended Exposure Limits (RELs)                           |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1                  |
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US TSCA Section 4/12 (b) - Sunset Dates/Status                        |

isophorone diisocyanate homopolymer is found on the following regulatory lists

|                                                                       |
|-----------------------------------------------------------------------|
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
|-----------------------------------------------------------------------|

hydrocarbons, C9-12, hydrotreated, dearomatised is found on the following regulatory lists

|                                                             |
|-------------------------------------------------------------|
| Chemical Footprint Project - Chemicals of High Concern List |
|-------------------------------------------------------------|

Additional Regulatory Information

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

|                                                              |     |
|--------------------------------------------------------------|-----|
| Flammable (Gases, Aerosols, Liquids, or Solids)              | Yes |
| Gas under pressure                                           | No  |
| Explosive                                                    | No  |
| Self-heating                                                 | No  |
| Pyrophoric (Liquid or Solid)                                 | No  |
| Pyrophoric Gas                                               | No  |
| Corrosive to metal                                           | No  |
| Oxidizer (Liquid, Solid or Gas)                              | No  |
| Organic Peroxide                                             | No  |
| Self-reactive                                                | No  |
| In contact with water emits flammable gas                    | No  |
| Combustible Dust                                             | No  |
| Carcinogenicity                                              | No  |
| Acute toxicity (any route of exposure)                       | No  |
| Reproductive toxicity                                        | Yes |
| Skin Corrosion or Irritation                                 | Yes |
| Respiratory or Skin Sensitization                            | Yes |
| Serious eye damage or eye irritation                         | No  |
| Specific target organ toxicity (single or repeated exposure) | Yes |
| Aspiration Hazard                                            | No  |

Continued...

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|                                  |    |
|----------------------------------|----|
| Germ cell mutagenicity           | No |
| Simple Asphyxiant                | No |
| Hazards Not Otherwise Classified | No |

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

| Name            | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|-----------------|------------------------------------|---------------------------|
| toluene         | 1000                               | 454                       |
| n-butyl acetate | 5000                               | 2270                      |
| xylene          | 100                                | 45.4                      |
| cyclohexane     | 1000                               | 454                       |

US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

| CAS No    | %[weight] | Name        |
|-----------|-----------|-------------|
| 108-88-3  | 50-100    | toluene     |
| 1330-20-7 | 2.5-10    | xylene      |
| 110-82-7  | 0.1-2.5   | cyclohexane |

This information must be included in all SDSs that are copied and distributed for this material.

Additional Federal Regulatory Information

Not Applicable

State Regulations

US. California Proposition 65

 **WARNING:** This product can expose you to chemicals including **toluene**, which is known to the State of California to cause birth defects or other reproductive harm. For more information, go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

Additional State Regulatory Information

Not Applicable

National Inventory Status

| National Inventory                              | Status                                                                                                                                                                                            |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Australia - AIIC / Australia Non-Industrial Use | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Canada - DSL                                    | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Canada - NDSL                                   | No (toluene; n-butyl acetate; diacetone alcohol; xylene; cyclohexane; isophorone diisocyanate homopolymer; hydrocarbons, C9-12, hydrotreated, dearomatised)                                       |
| China - IECSC                                   | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Europe - EINEC / ELINCS / NLP                   | Yes                                                                                                                                                                                               |
| Japan - ENCS                                    | No (isophorone diisocyanate homopolymer; hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                         |
| Korea - KECI                                    | Yes                                                                                                                                                                                               |
| New Zealand - NZIoC                             | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Philippines - PICCS                             | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| USA - TSCA                                      | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Taiwan - TCSI                                   | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Mexico - INSQ                                   | No (isophorone diisocyanate homopolymer; hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                         |
| Vietnam - NCI                                   | No (hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                                                              |
| Russia - FBEPH                                  | No (isophorone diisocyanate homopolymer; hydrocarbons, C9-12, hydrotreated, dearomatised)                                                                                                         |
| <b>Legend:</b>                                  | Yes = All CAS declared ingredients are on the inventory<br>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

SECTION 16 Other information

|               |            |
|---------------|------------|
| Revision Date | 14/06/2024 |
| Initial Date  | 27/06/2022 |

SDS Version Summary

| Version | Date of Update | Sections Updated                                                                                |
|---------|----------------|-------------------------------------------------------------------------------------------------|
| 3.8     | 14/06/2024     | Hazards identification - Classification, Composition / information on ingredients - Ingredients |

Other information

**Single Ply / Plastic Primer****Definitions and abbreviations**

- ▶ PC—TWA: Permissible Concentration-Time Weighted Average
- ▶ PC—STEL: Permissible Concentration-Short Term Exposure Limit
- ▶ IARC: International Agency for Research on Cancer
- ▶ ACGIH: American Conference of Governmental Industrial Hygienists
- ▶ STEL: Short Term Exposure Limit
- ▶ TEEL: Temporary Emergency Exposure Limit
- ▶ IDLH: Immediately Dangerous to Life or Health Concentrations
- ▶ ES: Exposure Standard
- ▶ OSF: Odour Safety Factor
- ▶ NOAEL: No Observed Adverse Effect Level
- ▶ LOAEL: Lowest Observed Adverse Effect Level
- ▶ TLV: Threshold Limit Value
- ▶ LOD: Limit Of Detection
- ▶ OTV: Odour Threshold Value
- ▶ BCF: BioConcentration Factors
- ▶ BEI: Biological Exposure Index
- ▶ DNEL: Derived No-Effect Level
- ▶ PNEC: Predicted no-effect concentration
  
- ▶ AIIC: Australian Inventory of Industrial Chemicals
- ▶ DSL: Domestic Substances List
- ▶ NDSL: Non-Domestic Substances List
- ▶ IECSC: Inventory of Existing Chemical Substance in China
- ▶ EINECS: European INventory of Existing Commercial chemical Substances
- ▶ ELINCS: European List of Notified Chemical Substances
- ▶ NLP: No-Longer Polymers
- ▶ ENCS: Existing and New Chemical Substances Inventory
- ▶ KECI: Korea Existing Chemicals Inventory
- ▶ NZIoC: New Zealand Inventory of Chemicals
- ▶ PICCS: Philippine Inventory of Chemicals and Chemical Substances
- ▶ TSCA: Toxic Substances Control Act
- ▶ TCSI: Taiwan Chemical Substance Inventory
- ▶ INSQ: Inventario Nacional de Sustancias Químicas
- ▶ NCI: National Chemical Inventory
- ▶ FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

The information contained in the Safety Data Sheet is based on our data available on the date of publication. This information is intended to aid the user in controlling the handling risks. It is not to be construed as a warranty or specification of the product quality. The information may not be or may not altogether be applicable to combinations of the product with other substances or to particular applications. The user is responsible for ensuring that appropriate precautions are taken and for satisfying themselves that the data are suitable and sufficient for the intended use of the product. In case of any unclarity we advise consulting the supplier or an expert.