

1. IDENTIFICATION OF THE SUBSTRATE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Trade name/designation: Caltech Metprime Activator

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

Relevant identified uses: Primer

1.3 Manufacturer/Supplier

Supplier:
Alumasc Building Products Ltd
White House Works, Bold Road, Sutton, St Helens, Merseyside, United Kingdom, WA9 4JG
Tel: +44 (0)1744 648400
e-mail: technical@alumascroofing.com

1.4 Emergency telephone number

Association / Organisation: National Poisons Information Service
Emergency telephone numbers: 0344 892 0111 (Healthcare professionals only)
Other emergency telephone numbers Alumasc Building Products: +44 17 4464 8400
(Mon-Thurs – 08.30-17.00 Fri – 08.30-16.00)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Considered a hazardous mixture according to Reg. (EC) No 1272/2008 and their amendments. Classified as Dangerous Goods for transport purposes.

Classification according to Regulation (EC) No. 1272/2008 [CLP][1]:

H226 - Flammable Liquid Category 3, H336 - Specific target organ toxicity - single exposure Category 3 (narcotic effects), H411 - Chronic Aquatic Hazard Category 2, H373 - Specific target organ toxicity - repeated exposure Category 2, H318 - Serious Eye Damage/Eye Irritation Category 1, H335 - Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), H315 - Skin Corrosion/Irritation Category 2

Legend:

1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

2.2 Label elements

Hazard pictures:



Signal word:

Danger

Hazard statements:

H226: Flammable liquid and vapour.
H336: May cause drowsiness or dizziness.
H411: Toxic to aquatic life with long lasting effects.
H373: May cause damage to organs through prolonged or repeated exposure.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H351: Suspected of causing cancer.

Supplementary statements:

Not Applicable.

Precautionary statements prevention:

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe mist/vapours/spray.
P271: Use only a well-ventilated area.
P280: Wear protective gloves, protective clothing, eye protection and face protection.
P240: Ground and bond container and receiving equipment.

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- P241: Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
- P242: Use non-sparking tools.
- P243: Take action to prevent static discharges.
- P273: Avoid release to the environment.
- P264: Wash all exposed external body areas thoroughly after handling.

Precautionary statements response:

- P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310: Immediately call a POISON CENTER/doctor/physician/first aider.
- P370+P378: In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
- P391 Collect spillage.
- P302+P352: IF ON SKIN: Wash with plenty of water and soap.
- P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P362+P364: Take off contaminated clothing and wash it before reuse.

Precautionary statements storage:

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

Precautionary statements disposal:

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

2.3 Other hazards

- naphtha petroleum, light aromatic solvent : Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
- n-butanol: Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)
- xylene: Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

3.1 Substances

See 'Composition on ingredients' in Section 3.2

3.2 Mixtures

| 1.CAS No 2.EC No 3.Index No 4.REACH No | % [weight] | Name | Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 | Nanoform Particle Characteristics |
|--|---------------|---|---|--------------------------------------|
| 1.64742-95-6 2.265-199-0 3.649-356-00-4 4.Not Available | 30-60 | <u>naphtha petroleum, light aromatic solvent</u> | Flammable Liquid Category 3, Germ cell mutagenicity Category 1B, Carcinogenicity Category 1B. Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - single exposure Category 3 (narcotic effects), Aspiration Hazard Category 1, Chronic Aquatic Hazard Category 2; H226, H340, H350, H335, H336, H304, H411, EUH066 [1] | Not Available |
| 1.198028-08-9 2.Not Available 3.Not Available 4.Not Available | 10-30 | <u>fatty acids, C18-unsaturated/ isophthalic acid/ TETA</u> | Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Chronic Aquatic Hazard Category 3; H315, H319, H412 [1] | Not Available |

| | | | | |
|---|---|------------------|---|---------------|
| 1.71-36-3 2.200-751-6 3.603-004-00-6 4.Not Available | 10-30 | <u>n-butanol</u> | Flammable Liquid Category 3, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - single exposure Category 3 (narcotic effects); H226, H302, H315, H318, H335, H336 [2] | Not Available |
| 1.1330-20-7 2.215-535-7 3.601-022-00-9 4.Not Available | 10-30 | <u>xylene</u> * | Flammable Liquid Category 3, Acute Toxicity (Dermal) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion / Irritation Category 2; H226, H312, H332, H315 [2] | Not Available |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties | | | |

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact:

If this product comes in contact with the eyes:
Immediately hold eyelids apart and flush the eye continuously with running water.
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.
Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
Transport to hospital or doctor without delay.
Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin contact:

If skin contact occurs:
Quickly but gently, wipe material off skin with a dry, clean cloth.
Immediately remove all contaminated clothing, including footwear.
Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
Transport to hospital, or doctor.

Inhalation:

If fumes or combustion products are inhaled remove from contaminated area.
Lay patient down. Keep warm and rested.
Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
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.
Transport to hospital, or doctor, without delay.

Ingestion:

IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
For advice, contact a Poisons Information Centre or a doctor.
Urgent hospital treatment is likely to be needed.
In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.

Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
NOTE: Wear a protective glove when inducing vomiting by mechanical means.

If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.
Avoid giving milk or oils.
Avoid giving alcohol.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11.

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

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.

Treat symptomatically.

For petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
- Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
- Positive pressure ventilation may be necessary.
- Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
- After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary oedema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
- Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
- Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

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To treat poisoning by the higher aliphatic alcohols (up to C7):

- Gastric lavage with copious amounts of water.
- It may be beneficial to instill 60 ml of mineral oil into the stomach.
- Oxygen and artificial respiration as needed.
- Electrolyte balance: it may be useful to start 500 ml. M/6 sodium bicarbonate intravenously but maintain a cautious and conservative attitude toward electrolyte replacement unless shock or severe acidosis threatens.
- To protect the liver, maintain carbohydrate intake by intravenous infusions of glucose.
- Haemodialysis if coma is deep and persistent. [GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products, Ed 5]

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 shock.
- Monitor and treat, where necessary, for pulmonary oedema.
- Anticipate and treat, where necessary, for seizures.
- 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
- If the patient is hypoglycaemic (decreased or loss of consciousness, tachycardia, pallor, dilated pupils, diaphoresis and/or dextrose strip or glucometer readings below 50 mg), give 50% dextrose.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.

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- Drug therapy should be considered for pulmonary oedema.
- 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.
- Acidosis may respond to hyperventilation and bicarbonate therapy.
- Haemodialysis might be considered in patients with severe intoxication.
- Consult a toxicologist as necessary. BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

For C8 alcohols and above.

Symptomatic and supportive therapy is advised in managing patients.

For acute or short term repeated exposures to xylene:

- Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- Pulmonary absorption is rapid with about 60-65% retained at rest.
- Primary threat to life from ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases ($pO_2 < 50$ mm Hg or $pCO_2 > 50$ mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury 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 (adrenalin) 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.

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 |
|--------------------------------|----------------------------------|-------------------------------------|----------|
| Methylhippu-ric acids in urine | 1.5 gm/gm creatinine 2 mg/min | End of shift Last 4 hrs of shift | |

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Alcohol stable foam.
Dry chemical powder.
BCF (where regulations permit).

5.2 Special hazards arising from the substance or mixture

Fire incompatibility:

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

5.3 Advice for fire-fighters

Fire-fighting:

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves in the event of a fire.

Fire/explosion hazard:

- Liquid and vapour are highly flammable.
- Severe fire hazard when exposed to heat, flame and/or oxidisers.
- Vapour may travel a considerable distance to source of ignition.

Combustion products include:
carbon dioxide (CO₂)
nitrogen oxides (NO_x)
other pyrolysis products typical of burning organic material.
May emit clouds of acrid smoke

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

See Section 8.

6.2 Environmental Precautions

See Section 12.

6.3 Methods and material for containment and cleaning up

Minor spills:

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.

Major spills:

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.

6.4 Reference to other sections

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

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling:

The conductivity of this material may make it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Electrostatic discharge may be generated during pumping - this may result in fire.
- Ensure electrical continuity by bonding and grounding (earthing) all equipment.
- Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/sec until fill pipe submerged to twice its diameter, then ≤ 7 m/sec).
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- **DO NOT allow clothing wet with material to stay in contact with skin**

Fire & explosion protection:

See Section 5.

Other information:

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- **DO NOT store in pits, depressions, basements or areas where vapours may be trapped.**

7.2 Conditions for safe storage, including any incompatibilities

Suitable container:

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt.

Storage incompatibility:

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.

Alcohols

- are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.
- reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen
- react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium
- should not be heated above 49 deg. C. when in contact with aluminium equipment

| | | | | | | |
|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |
| + | X | + | X | + | + | + |

X - Must not be stored together.

O - May be stored together with specific preventions.

+ - May be stored together.

Note: Depending on other risk factors, compatibility assessment based on the table above may not be relevant to storage situations, particularly where large volumes of dangerous goods are stored and handled. Reference should be made to the Safety Data Sheets for each substance or article and risks assessed accordingly.

7.3 Specific end uses(s)

See Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

| Ingredient | DNELs Exposure Pattern Worker | PNECs Compartment |
|---|---|---|
| naphtha petroleum, light aromatic solvent | Inhalation 837.5 mg/m ³ (Local, Chronic) Inhalation 1 286.4 mg/m ³ (Systemic, Acute) Inhalation 1 066.67 mg/m ³ (Local, Acute) <i>Inhalation 178.57 mg/m³ (Local, Chronic) *</i> <i>Inhalation 1 152 mg/m³ (Systemic, Acute) *</i> <i>Inhalation 640 mg/m³ (Local, Acute) *</i> | Not Available |
| n-butanol | Inhalation 310 mg/m ³ (Local, Chronic) <i>Dermal 3.125 mg/kg bw/day (Systemic, Chronic) *</i> <i>* Inhalation 55.357 mg/m³ (Systemic, Chronic) *</i> <i>Oral 1.562 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 155 mg/m³ (Local, Chronic) *</i> | 0.082 mg/L (Water (Fresh)) 0.008 mg/L (Water - Intermittent release) 2.25 mg/L (Water (Marine)) 0.324 mg/kg sediment dw (Sediment (Fresh Water)) 0.032 mg/kg sediment dw (Sediment (Marine)) 0.017 mg/kg soil dw (Soil) 2476 mg/L (STP) |
| xylene | Dermal 212 mg/kg bw/day (Systemic, Chronic) Inhalation 221 mg/m ³ (Systemic, Chronic) Inhalation 221 mg/m ³ (Local, Chronic) Inhalation 442 mg/m ³ (Systemic, Acute) Inhalation 442 mg/m ³ (Local, Acute) <i>Dermal 125 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 65.3 mg/m³ (Systemic, Chronic) *</i> <i>Oral 12.5 mg/kg bw/day (Systemic, Chronic) *</i> <i>Inhalation 65.3 mg/m³ (Local, Chronic) *</i> <i>Inhalation 260 mg/m³ (Systemic, Acute) *</i> <i>Inhalation 260 mg/m³ (Local, Acute) *</i> | 0.327 mg/L (Water (Fresh)) 0.327 mg/L (Water - Intermittent release) 0.327 mg/L (Water (Marine)) 12.46 mg/kg sediment dw (Sediment (Fresh Water)) 12.46 mg/kg sediment dw (Sediment (Marine)) 2.31 mg/kg soil dw (Soil) 6.58 mg/L (STP) |

* Values for general population.

Occupational Exposure Limits (OEL):

Ingredient data:

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|--|------------|-----------------------------------|--------------------------------|---------------------------------|---------------|----------|
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs) | n-butanol | Butan-1-ol | Not Available | 154 mg/m ³ / 50 ppm | Not Available | Sk |
| UK Workplace Exposure Limits (WELs) | xylene | Xylene (mixed isomers, pure) | 50 ppm / 221 mg/m ³ | 442 mg/m ³ / 100 ppm | Not Available | Skin |
| UK Workplace Exposure Limits (WELs) | xylene | Xylene, o-,m-,p- or mixed isomers | 50 ppm / 220 mg/m ³ | 441 mg/m ³ / 100 ppm | Not Available | Sk, BMGV |

Emergency limits:

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|---|-------------------------|-------------------------|--------------------------|
| naphtha petroleum, light aromatic solvent | 1,200 mg/m ³ | 6,700 mg/m ³ | 40,000 mg/m ³ |
| n-butanol | 60 ppm | 800 ppm | 8000** ppm |
| xylene | Not Available | Not Available | Not Available |


| Ingredient | Original IDLH | Revised IDLH |
|--|---------------|---------------|
| naphtha petroleum, light aromatic solvent | Not Available | Not Available |
| fatty acids, C18-unsaturated/ isophthalic acid/ TETA | Not Available | Not Available |
| n-butanol | 1,400 ppm | Not Available |
| xylene | 900 ppm | Not Available |

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Occupational Exposure Banding

| Ingredient | Occupational Exposure Band Rating | Occupational Exposure Band Limit |
|--|--|----------------------------------|
| naphtha petroleum, light aromatic solvent | E | ≤ 0.1 ppm |
| fatty acids, C18-unsaturated/ isophthalic acid/ TETA | 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. | |

8.2 Exposure controls

| | |
|--|--|
| 8.2.1. Appropriate engineering controls | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. |
| 8.2.2. Personal protection |  |
| Eye and face protection: | Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. |
| Skin protection: | See Hand Protection below. |
| Hands/feet protection: | Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber 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. 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. |
| Body protection: | See Other Protection below. |
| Other protection: | Overalls. PVC Apron. PVC protective suit may be required if exposure severe. Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). Non sparking safety or conductive footwear should be considered. |

| | |
|-------------------------------|---|
| Respiratory protection | Type AK-P 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 76ak-p() |
|-------------------------------|---|

Recommended material(s)

GLOVE SELECTION INDEX

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

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

Euroroof Spray Cleaning Solvent

| Materia | CPI | Materia | CPI |
|------------|-----|-------------------|-----|
| PE/EVAL/PE | A | NATURAL RUBBER | C |
| PVA | A | NEOPRENE | C |
| TEFLON | B | VITON | C |
| BUTYL | C | VITON/BUTYL | C |
| CPE | C | VITON/CHLOROBUTYL | C |

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

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

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

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

8.2.3. Environmental exposure controls:

See Section 12.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

| | | | |
|--|-------------------|---|---------------|
| Appearance: | Yellow | | |
| Physical state: | Liquid | Relative density (Water = 1): | 0.8-0.9 |
| Odour: | Not Available | Partition coefficient n-octanol/water: | Not Available |
| Odour threshold: | Not Available | Auto-ignition temperature (°C): | Not Available |
| pH (as supplied): | Not Available | Decomposition temperature: | Not Available |
| Melting point/freezing point (°C): | Not Available | Viscosity (cSt): | Not Available |
| Initial boiling point and boiling range (°C): | Not Available | Molecular weight (g/mol): | Not Available |
| Flash point (°C): | 21-23 | Taste: | Not Available |
| Evaporation rate: | Not Available | Explosive properties: | Not Available |
| Flammability: | HIGHLY FLAMMABLE. | Oxidising properties: | Not Available |
| Upper Explosive Limit (%): | Not Available | Surface Tension (dyn/cm or mN/m): | Not Available |
| Lower Explosive Limit (%): | Not Available | Volatile Component (%vol): | Not Available |
| Vapour pressure (kPa): | Not Available | Gas group: | Not Available |
| Solubility in water: | Immiscible | pH as a solution (1%): | Not Available |
| Vapour density (Air = 1): | >1 | VOC g/L: | Not Available |
| Nanoform Solubility | Not Available | Nanoform Particle Characteristics | Not Available |

Our company policy is one of continuous research and development; we therefore reserve the right to amend content herein without prior notice.

| | | |
|----------------------|---------------|--|
| Particle Size | Not Available | |
|----------------------|---------------|--|

9.2 Other information

Not Available

10. STABILITY AND REACTIVITY

10.1 Reactivity

See Section 7.2.

10.2 Chemical stability

Unstable in the presence of incompatible materials.
Product is considered stable.
Hazardous polymerisation will not occur.

10.3 Possibility of hazardous reactions

See Section 7.2.

10.4 Conditions to avoid

See Section 7.2.

10.5 Incompatible materials

See Section 7.2.

10.6 Hazardous decomposition products

See Section 5.3

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

| | |
|-----------------|--|
| Inhaled: | <p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>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>There is strong evidence to suggest that this material can cause, if inhaled once, serious, irreversible damage of organs.</p> <p>Inhalation of epoxy resin amine hardeners (including polyamines and amine adducts) may produce bronchospasm and coughing episodes lasting several days after cessation of the exposure. Even faint traces of these vapours may trigger an intense reaction in individuals showing "amine asthma".</p> <p>Exposure to n-butanol causes dose dependent irritation and headaches in humans, but CNS depression and prostration in mice. Though the offensive odour may forewarn, the smell sense may become fatigued.</p> <p>Aliphatic alcohols with more than 3-carbons cause headache, dizziness, drowsiness, muscle weakness and delirium, central depression, coma, seizures and behavioural changes. Secondary respiratory depression and failure, as well as low blood pressure and irregular heart rhythms, may follow.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Inhaling high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and stupor.</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. On exposure to mixed trimethylbenzenes, some people may become nervous, tensed, anxious and have difficult breathing. There may be a reduction red blood cells and bleeding abnormalities. There may also be drowsiness.</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>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. 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> |
| Ingestion: | <p>Strong evidence exists that exposure to the material may cause irreversible damage (other than cancer, mutations and birth defects) following a single exposure by swallowing.</p> <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>Overexposure to non-ring alcohols causes nervous system symptoms. These include headache, muscle weakness and inco-ordination, giddiness, confusion, delirium and coma.</p> <p>Ingestion of amine epoxy-curing agents (hardeners) may cause severe abdominal pain, nausea, vomiting or diarrhoea. The vomitus may contain blood and mucous.</p> <p>Swallowing of n-butanol may cause breathing difficulties, headache, nausea, vomiting, irritation of the airway and mucous membranes as well as depression of the central nervous system.</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>Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.</p> <p>Accidental ingestion of the material may be damaging to the health of the individual.</p> |
| Skin contact: | <p>There is strong evidence to suggest that this material, on a single contact with skin, can cause serious, irreversible damage of organs. The material may accentuate any pre-existing dermatitis condition</p> <p>Amine epoxy-curing agents (hardeners) may produce primary skin irritation and sensitisation dermatitis in predisposed individuals. Cutaneous reactions include erythema, intolerable itching and severe facial swelling.</p> <p>Most liquid alcohols appear to act as primary skin irritants in humans. Significant percutaneous absorption occurs in rabbits but not apparently in man.</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>The liquid may be able to be mixed with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives.</p> <p>Skin contact with the material may be harmful; systemic effects may result following absorption.</p> <p>Aromatic hydrocarbons may produce sensitivity and redness of the skin. They are not likely to be absorbed into the body through the skin but branched species are more likely to.</p> |
| Eye: | <p>If applied to the eyes, this material causes severe eye damage.</p> <p>N-butanol can cause eye damage, burning sensation, blurring of vision, excessive tear formation and discomfort to bright light.</p> <p>Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.</p> <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> |
| Chronic: | <p>Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems. Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.</p> <p>Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function.</p> <p>Skin exposure may result in drying and cracking and redness of the skin.</p> <p>Hearing and balance loss have been reported with exposure to n-butanol, especially with concomitant long term unprotected exposure to high noise.</p> |

CALTECH METPRIME ACTIVATOR
SAFETY DATA SHEET

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| | |
|--|---|
| | There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. 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. |
|--|---|

Caltech Metprime Activator:

| Toxicity | Irritation |
|---------------|---------------|
| Not available | Not available |

naphtha petroleum, light aromatic solvent:

| Toxicity | Irritation |
|---|---|
| Dermal (rabbit) LD50: >1900 mg/kg ^[1] | Eye: no adverse effect observed (not irritating) ^[1] |
| Inhalation(Rat) LC50; >4.42 mg/L4h ^[1] | Skin: adverse effect observed (irritating) ^[1] |
| Oral(Rat) LD50; >4500 mg/kg ^[1] | |
| | |

fatty acids, C18-unsaturated/ isophthalic acid/ TETA:

| Toxicity | Irritation |
|---------------|---------------|
| Not available | Not available |

n-butanol:

| Toxicity | Irritation |
|--|---|
| Dermal (rabbit) LD50: ~3430 mg/kg ^[1] | Eye (human): 50 ppm - irritant |
| Inhalation(Rat) LC50; >17.76 mg/l4h ^[2] | Eye (rabbit): 1.6 mg-SEVERE |
| Oral(Mouse) LD50; 100 mg/kg ^[2] | Eye (rabbit): 24 mg/24h-SEVERE |
| | Eye: adverse effect observed (irreversible damage) ^[1] |
| | Skin (rabbit): 405 mg/24h-moderate |
| | Skin: adverse effect observed (irritating) ^[1] |

Xylene:

| Toxicity | Irritation |
|--|---|
| Dermal (rabbit) LD50: >1700 mg/kg ^[2] | Eye (human): 200 ppm irritant |
| Inhalation(Rat) LC50; 5922 ppm4h ^[1] | Eye (rabbit): 5 mg/24h SEVERE |
| Oral(Mouse) LD50; 2119 mg/kg ^[2] | Eye (rabbit): 87 mg mild |
| | Eye: adverse effect observed (irritating) ^[1] |
| | Skin (rabbit):500 mg/24h moderate |
| | Skin: adverse effect observed (irritating) ^[1] |

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity; 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances.

| | |
|---|--|
| Caltech Metprime Activator | 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. 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. 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. |
| NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT | For C9 aromatics (typically trimethylbenzenes – TMBs) Acute toxicity: Animal testing shows that semi-lethal concentrations and doses vary amongst this group. The semilethal concentrations for inhalation range from 6000 to 10000 mg/cubic metre for C9 aromatic naphtha and 18000-24000 mg/cubic metre for 1,2,4- and 1,3,5-TMB, respectively. Irritation and sensitization: Results from animal testing indicate that C9 aromatic hydrocarbon solvents are mildly to moderately irritating to the skin, minimally irritating to the eye, and have the potential to irritate the airway and cause depression of breathing rate. There is no evidence that it sensitizes skin. Repeated dose toxicity: Animal studies show that chronic inhalation toxicity for C9 aromatic hydrocarbon solvents is slight. * [Devoe] . |
| FATTY ACIDS, C18-UNSATURATED/ISOPHTHALIC ACID/ TETA | No significant acute toxicological data identified in literature search. |
| N-BUTANOL | For n-butanol: Acute toxicity: In animal testing, n-butanol (BA) was only slightly toxic, following exposure by swallowing, skin contact or irritation. Animal testing and human experience suggest that n-butanol is moderately irritating to the skin but severely irritating to the eye. Human studies show that BA is not likely to cause skin sensitization. |
| XYLENE | Reproductive effector in rats The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| Caltech Metprime Activator & NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT & N-BUTANOL | 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. |
| Caltech Metprime Activator & NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT | For trimethylbenzenes: Absorption of 1,2,4-trimethylbenzene occurs after exposure by swallowing, inhalation, or skin contact. In the workplace, inhalation and skin contact are the most important routes of absorption; whole-body toxic effects from skin absorption are unlikely to occur as the skin irritation caused by the chemical generally leads to quick removal. The substance is fat-soluble and may accumulate in fatty tissues. |
| N-BUTANOL & XYLENE | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause 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. |

| | | | |
|--|----------|---------------------------------|----------|
| Acute Toxicity | ✘ | Carcinogenicity | ✘ |
| Skin Irritation/Corrosion | ✔ | Reproductivity | ✘ |
| Serious Eye Damage/Irritation | ✔ | STOT - Single Exposure | ✔ |
| Respiratory or Skin Sensitisation | ✘ | STOT - Repeated Exposure | ✔ |
| Mutagenicity | ✘ | Aspiration Hazard | ✘ |

Legend:

- ✘** - Data either not available or does not fill the criteria for classification.
- ✔** - Data available to make classification.

11.2.1. Endocrine Disruption Properties

Not Available

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Caltech Metprime Activator:

| End point | Test duration (Hr) | Species | Value | Source |
|---------------|--------------------|---------------|---------------|---------------|
| Not available | Not available | Not available | Not available | Not available |

naphtha petroleum, light aromatic solvent:

| End point | Test duration (Hr) | Species | Value | Source |
|-----------|--------------------|-------------------------------|----------|--------|
| NOEC(ECx) | 72h | Algae or other aquatic plants | 1mg/l | 1 |
| EC50 | 72h | Algae or other aquatic plants | 19mg/l | 1 |
| EC50 | 48h | Crustacea | 6.14mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | 64mg/l | 2 |

fatty acids, C18-unsaturated/isophthalic acid/ TETA:

| End point | Test duration (Hr) | Species | Value | Source |
|---------------|--------------------|---------------|---------------|---------------|
| Not available | Not available | Not available | Not available | Not available |

n-butanol:

| End point | Test duration (Hr) | Species | Value | Source |
|-----------|--------------------|-------------------------------|-------------|--------|
| NOEC(ECx) | 504h | Crustacea | 4.1mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | >500mg/l | 1 |
| LC50 | 96h | Fish | 100-500mg/l | 4 |
| EC50 | 48h | Crustacea | >500mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | 225mg/l | 2 |

xylene:

| End point | Test duration (Hr) | Species | Value | Source |
|-----------|--------------------|-------------------------------|----------|--------|
| EC50 | 72h | Algae or other aquatic plants | 4.6mg/l | 2 |
| LC50 | 96h | Fish | 2.6mg/l | 2 |
| EC50 | 48h | Crustacea | 1.8mg/l | 2 |
| NOEC(ECx) | 73h | Algae or other aquatic plants | 0.44mg/l | 2 |

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

Toxic 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.

When spilled this product may act as a typical oil, causing a film, sheen, emulsion or sludge at or beneath the surface of the body of water. The oil film on water surface may physically affect the aquatic organisms, due to the interruption of the oxygen transfer between the air and the water

Oils of any kind can cause:

- drowning of water-fowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility

- lethal effects on fish by coating gill surfaces, preventing respiration

- asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom and adverse aesthetic effects of fouled shoreline and beaches

In case of accidental releases on the soil, a fine film is formed on the soil, which prevents the plant respiration process and the soil particle saturation. It may cause deep water infestation.

For 1,2,4 - Trimethylbenzene:

Half-life (hr) air: 0.48-16;

Half-life (hr) H₂O surface water: 0.24 -672;

Half-life (hr) H₂O ground: 336-1344;

Half-life (hr) soil: 168-672;

Henry's Pa m³ /mol: 385 -627;

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Bioaccumulation: not significant. 1,2,4-Trimethylbenzene is a volatile organic compound (VOC) substance.
Atmospheric Fate: 1,2,4-trimethylbenzene can contribute to the formation of photochemical smog in the presence of other VOCs.

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.

For petroleum distillates:

Environmental fate:

When petroleum substances are released into the environment, four major fate processes will take place: dissolution in water, volatilization, biodegradation and adsorption. These processes will cause changes in the composition of these UVCB substances. In the case of spills on land or water surfaces, photodegradation-another fate process-can also be significant.

For C9 aromatics (typically trimethylbenzene - TMBs)

Chemicals in this category possess properties indicating a hazard for the environment (acute toxicity for fish, invertebrates, and algae from 1 to 10 mg/L). Category members are readily biodegradable, except 1,3,5-trimethylbenzene (CAS RN 108-67-8). Category members are not expected to be bioaccumulative.

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.

DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|-----------------------------|-----------------------------|
| n-butanol | LOW (Half-life = 54 days) | LOW (Half-life = 3.65 days) |
| xylene | HIGH (Half-life = 360 days) | LOW (Half-life = 1.83 days) |

12.3 Bioaccumulation potential

| Ingredient | Bioaccumulation |
|------------|--------------------|
| n-butanol | LOW (BCF = 0.64) |
| xylene | MEDIUM (BCF = 740) |

12.4 Mobility in soil

| Ingredient | Mobility |
|------------|----------------------|
| n-butanol | MEDIUM (KOC = 2.443) |

12.5 Results of PBT and vPvB assessment

| | P | B | T |
|-------------------------|---------------|---------------|---------------|
| Relevant available data | Not Available | Not Available | Not Available |
| PBT | ✗ | ✗ | ✗ |
| vPvB | ✗ | ✗ | ✗ |

| | |
|-------------------------|----|
| PBT Criteria fulfilled? | No |
| vPvB | No |

12.6 Endocrine Disruption Properties

Not Available

12.7. Other adverse effects

Not Available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

| | |
|--------------------------------------|---|
| Product / packaging disposal: | <p>Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible.</p> <p>Otherwise:</p> <p>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.</p> <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>DO NOT allow wash water from cleaning or process equipment to enter drains.</p> <p>It may be necessary to collect all wash water for treatment before disposal.</p> <p>In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</p> <p>Recycle wherever possible.</p> <p>Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</p> <p>Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).</p> |
| Waste treatment options: | Not available. |
| Sewage disposal options: | Not available. |

14. TRANSPORT INFORMATION

Labels required:



Marine Pollutant:

Hazchem:

3Y

Land transport (ADR):

| | |
|--|---|
| 14.1 UN number | 1263 |
| 14.2 UN proper shipping name | PAINT or PAINT RELATED MATERIAL |
| 14.3 Transport hazard class(es) | Class: 3 Subrisk: N/A |
| 14.4 Packing group | III |
| 14.5 Environmental hazard | Environmentally hazardous |
| 14.6 Special precautions for user | <p>Hazard identification (Kemler): 30</p> <p>Classification code: F1</p> <p>Hazard label: 3</p> <p>Special provisions: 163 367 650</p> <p>Limited quantity: 5 L</p> <p>Tunnel restriction code: 3 (D/E) (E)</p> |

Air transport (ICAO-IATA/DGR):

| | |
|--|--|
| 14.1 UN number | 1263 |
| 14.2 UN proper shipping name | Paint (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) |
| 14.3 Transport hazard class(es) | ICAO/IATA class: 3 ICAO/IATA subrisk: N/A ERG code: 3L |
| 14.4 Packing group | III |
| 14.5 Environmental hazard | Environmentally hazardous |
| 14.6 Special precautions for user | Special provisions: A3 A72 A192 |

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| | | |
|--|---|--------|
| | Cargo only packing instruction: | 366 |
| | Cargo only maximum qty/pack: | 220 kg |
| | Passenger and cargo packing instruction: | 355 |
| | Passenger and cargo maximum qty/pack: | 60 L |
| | Passenger and cargo limited qty packing instructions: | Y344 |
| | Passenger and cargo limited maximum qty/pack: | 10 L |

Sea transport (IMDG-Code/GGVSee):

| | |
|--|--|
| 14.1 UN number | 1263 |
| 14.2 UN proper shipping name | PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound) |
| 14.3 Transport hazard class(es) | IMDG class: 3 IMDG subrisk: Not Applicable |
| 14.4 Packing group | III |
| 14.5 Environmental hazard | Marine Pollutant |
| 14.6 Special precautions for user | EMS number: F-E , S-E Special provisions: 163 223 367 955 Limited quantities: 5 L |

Inland waterways transport (ADN):

| | |
|--|---|
| 14.1 UN number | 1263 |
| 14.2 UN proper shipping name | PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning and reducing compound) |
| 14.3 Transport hazard class(es) | Class: 3 Subrisk: N/A |
| 14.4 Packing group | III |
| 14.5 Environmental hazard | Environmentally hazardous |
| 14.6 Special precautions for user | Classification code: F1 Special provisions: 163; 367; 650 Limited quantity: 5 L Equipment required: PP, EX, A Fire cones numbers: 0 |

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

Not Applicable

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

| Product Name | Group |
|--|---------------|
| naphtha petroleum, light aromatic solvent | Not Available |
| fatty acids, C18-unsaturated/ isophthalic acid/ TETA | Not Available |
| n-butanol | Not Available |
| xylene | Not Available |

14.9. Transport in bulk in accordance with the ICG Code

| Product Name | Ship Type |
|--|---------------|
| naphtha petroleum, light aromatic solvent | Not Available |
| fatty acids, C18-unsaturated/ isophthalic acid/ TETA | Not Available |
| n-butanol | Not Available |
| xylene | Not Available |

15. REGULATORY INFORMATION

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

naphtha petroleum, light aromatic solvent is found on the following regulatory lists:

| | |
|--|---|
| Chemical Footprint Project - Chemicals of High Concern List | Europe EC Inventory |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 2) Carcinogens: category 1B (Table 3.1)/category 2 (Table 3.2) | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 4) Mutagens: category 1B (Table 3.1)/category 2 (Table 3.2) | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |

fatty acids, C18-unsaturated/ isophthalic acid/ TETA is found on the following regulatory lists:

| |
|----------------|
| Not Applicable |
|----------------|

n-butanol is found on the following regulatory lists:

| | |
|--|---|
| EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances | European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| Europe EC Inventory | |

xylene is found on the following regulatory lists:

| | |
|--|---|
| EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs) | European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) |
| EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances | European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI |
| EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles | International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs |
| Europe EC Inventory | |

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

15.2 Chemical Safety Assessment

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

ECHA SUMMARY

| Ingredient | CAS number | Index No | ECHA Dossier |
|---|------------|--------------|-----------------------|
| naphtha petroleum, light aromatic solvent | 64742-95-6 | 649-356-00-4 | 01-2119486773-24-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|---|--|
| 1 | Flam. Liq. 3; Asp. Tox. 1; Skin Irrit. 2; Eye Irrit. 2; Resp. STOT SE 3; Narc. STOT SE 3; Aquatic Chronic 2 | GHS02; GHS09; GHS08; GHS07; Dgr | H226; H304; H315; H319; H335; H336 |
| 2 | Flam. Liq. 3; Asp. Tox. 1; Skin Irrit. 2; Eye Irrit. 2; Resp. STOT SE 3; Narc. STOT SE 3; Aquatic Chronic 2 | GHS02; GHS09; GHS08; GHS07; Dgr | H226; H304; H315; H319; H335; H336; H411 |
| 1 | Asp. Tox. 1; Muta. 1B; Carc. 1B | GHS08; Dgr | H304; H340; H350 |
| 2 | Asp. Tox. 1; Flam. Liq. 1; Skin Irrit. 2; Narc. STOT SE 3; Repr. 2; Aquatic Chronic 2; Eye Irrit. 2; Resp. STOT SE 3; Muta. 1A; Acute Tox. 4; Aquatic Acute 1; Carc. 1A; Acute Tox. 4; STOT RE 1 | GHS08; Dgr; GHS02; GHS09; GHS07; None Specified | H304; H224; H315; H336; H361; H411; H335; H318; H340; H332; H350; H302; H372 |

Our company policy is one of continuous research and development; we therefore reserve the right to amend content herein without prior notice.

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|--|-------------|---------------|---------------|
| fatty acids, C18-unsaturated/ isophthalic acid/ TETA | 198028-08-9 | Not Available | Not Available |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|--------------------------------|--------------------------|
| 1 | Skin Irrit. 2; Eye Irrit. 2; Aquatic Chronic 3 | GHS07; Wng | H315; H319; H412 |
| 2 | Skin Irrit. 2; Eye Irrit. 2; Aquatic Chronic 3 | GHS07; Wng | H315; H319; H412 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|------------|------------|--------------|---|
| n-butanol | 71-36-3 | 603-004-00-6 | 01-2119484630-38-XXXX 01-2120076484-50-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|---|--------------------------------------|--|
| 1 | Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Resp. STOT SE 3; Narc. STOT SE 3 | GHS02; GHS05; GHS07; Dgr | H226; H302; H315; H318; H335; H336 |
| 2 | Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Dam. 1; Resp. STOT SE 3; Narc. STOT SE 3; Acute Tox. 4; Acute Tox. 2; Asp. Tox. 1; STOT RE 1 | GHS02; GHS05; GHS07; Dgr; GHS08; Wng | H302; H315; H318; H335; H336; H370; H332; H225; H304; H372 |

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

| Ingredient | CAS number | Index No | ECHA Dossier |
|------------|------------|--------------|-----------------------|
| xylene | 1330-20-7 | 601-022-00-9 | 01-2119488216-32-XXXX |

| Harmonisation (C&L Inventory) | Hazard Class and Category Code(s) | Pictograms Signal Word Code(s) | Hazard Statement Code(s) |
|-------------------------------|--|---|--|
| 1 | Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Acute Tox. 4 | GHS02; GHS07; Wng | H226; H312; H315; H332 |
| 2 | Acute Tox. 4; Skin Irrit. 2; Acute Tox. 4; Asp. Tox. 1; Eye Irrit. 2; Resp. STOT SE 3; Narc. STOT SE 3; Aquatic Chronic 2; Repr. 1B; STOT SE 1; STOT RE 1; Flam. Liq. 2; Acute Tox. 4; Lact.; Aquatic Acute 1; Asp. Tox. 2 | GHS02; GHS07; Wng; GHS08; Dgr; GHS01; GHS09 | H312; H315; H332; H304; H335; H336; H411; H360; H370; H372; H225; H302; H318; H362; H400 |

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

| National Inventory | Status |
|--|---|
| Australia - AIIIC / Australia Non-Industrial Use | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Canada - DSL | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Canada - NDSL | No (naphtha petroleum, light aromatic solvent; fatty acids, C18-unsaturated/ isophthalic acid/ TETA; n-butanol; xylene) |
| China - IECSC | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Europe - EINEC / ELINCS / NLP | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Japan - ENCS | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Korea - KECI | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| New Zealand - NZIoC | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Philippines - PICCS | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| USA - TSCA | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Taiwan - TCSI | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Mexico - INSQ | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Vietnam - NCI | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Russia - FBEPH | No (fatty acids, C18-unsaturated/ isophthalic acid/ TETA) |
| Legend: | Yes = All CAS declared ingredients are on the inventory. No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets). |

16. OTHER INFORMATION

Full text Risk and Hazard codes

H224: Extremely flammable liquid and vapour.
H225: Highly flammable liquid and vapour.
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H312: Harmful in contact with skin.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H340: May cause genetic defects.
H350: May cause cancer.
H360: May damage fertility or the unborn child.
H361: Suspected of damaging fertility or the unborn child.
H362: May cause harm to breast-fed children.
H370: Causes damage to organs.
H372: Causes damage to organs through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects..

SDS Version Summary

| Version | Date of Update | Section Updated |
|---------|----------------|-----------------|
| 2.0 | 01/08/2023 | Template Change |

Other information:

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

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios.

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

EN 166 Personal eye-protection
EN 340 Protective clothing
EN 374 Protective gloves against chemicals and micro-organisms
EN 13832 Footwear protecting against chemicals
EN 133 Respiratory protective devices

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
AII: 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

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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 contents and format of this SDS are in accordance with EEC Commission Directive 1999/45/EC, 67/548/EC, 1272/2008/EC and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

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