

# Safety Data Sheet



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

### 1.1. Product Identifier

Product name	MC002968 Super Shield Nickel Conductive Coating (Aerosol)
Synonyms	MC002968
Proper shipping name	AEROSOLS
Other means of identification	Not Available

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

Relevant identified uses	Electrically conductive coating and EMI/RFI shield
Uses advised against	Not Applicable

### 1.3. Details of the supplier of the safety data sheet

Registered company name	Premier Farnell plc
Address	150 Armley Road, Leeds, LS12 2QQ
Telephone	+44 (0) 870 129 8608
Fax	-
Email	-

### 1.4. Emergency telephone number

Association / Organisation	Premier Farnell plc
Emergency telephone numbers	+44 1865 407333
Other emergency telephone numbers	-


## SECTION 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]	Skin Sensitizer Category 1, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3 (narcotic effects), Carcinogenicity Category 2, Specific target organ toxicity - repeated exposure Category 1, Chronic Aquatic Hazard Category 3, Non-flammable aerosol Category 3, Aerosols Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

### 2.2. Label elements

CLP label elements	
SIGNAL WORD	DANGER

### Hazard statement(s)

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer.

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<b>H372</b>	Causes damage to organs through prolonged or repeated exposure.
<b>H412</b>	Harmful to aquatic life with long lasting effects.
<b>H229</b>	Pressurised container: May burst if heated.
<b>H223</b>	Flammable aerosol.

## Supplementary statement(s)

Not Applicable

## Precautionary statement(s) Prevention

<b>P201</b>	Obtain special instructions before use.
<b>P210</b>	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
<b>P211</b>	Do not spray on an open flame or other ignition source.
<b>P251</b>	Do not pierce or burn, even after use.
<b>P260</b>	Do not breathe dust/fume/gas/mist/vapours/spray.
<b>P271</b>	Use only outdoors or in a well-ventilated area.
<b>P280</b>	Wear protective gloves/protective clothing/eye protection/face protection.
<b>P270</b>	Do not eat, drink or smoke when using this product.
<b>P273</b>	Avoid release to the environment.
<b>P272</b>	Contaminated work clothing should not be allowed out of the workplace.

## Precautionary statement(s) Response

<b>P308+P313</b>	IF exposed or concerned: Get medical advice/ attention.
<b>P302+P352</b>	IF ON SKIN: Wash with plenty of water and soap.
<b>P305+P351+P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
<b>P312</b>	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
<b>P333+P313</b>	If skin irritation or rash occurs: Get medical advice/attention.
<b>P337+P313</b>	If eye irritation persists: Get medical advice/attention.
<b>P362+P364</b>	Take off contaminated clothing and wash it before reuse.
<b>P304+P340</b>	IF INHALED: Remove person to fresh air and keep comfortable for breathing.

## Precautionary statement(s) Storage

<b>P405</b>	Store locked up.
<b>P410+P412</b>	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
<b>P403+P233</b>	Store in a well-ventilated place. Keep container tightly closed.

## Precautionary statement(s) Disposal

<b>P501</b>	Dispose of contents/container in accordance with local regulations.
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## 2.3. Other hazards

Inhalation may produce health damage\*.

Cumulative effects may result following exposure\*.

May produce discomfort of the respiratory system\*.

Repeated exposure potentially causes skin dryness and cracking\*.

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

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1. Substances

See 'Composition on ingredients' in Section 3.2

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## 3.2. Mixtures

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008 [CLP]
1.7440-02-0 2.231-111-4 3.028-002-00-7, 028-002-01-4 4.01-2119438727-29-XXXX	31	<u><a href="#">nickel</a></u>	Carcinogenicity Category 2, Specific target organ toxicity - repeated exposure Category 1, Skin Sensitizer Category 1, Chronic Aquatic Hazard Category 3; H351, H372, H317, H412 <sup>[3]</sup>
1.67-64-1 2.200-662-2 3.606-001-00-8 4.01-2119498062-37-XXXX, 01-2119471330-49-XXXX	18	<u><a href="#">acetone</a></u>	Flammable Liquid Category 2, Eye Irritation Category 2, Specific target organ toxicity - single exposure Category 3(narcotic effects); H225, H319, H336, EUH066 <sup>[3]</sup>
1.74-98-6 2.200-827-9 3.601-003-00-5 4.01-2119486944-21-XXXX	13	<u><a href="#">propane</a></u>	Flammable Gas Category 1, Gas under Pressure; H220, H280 <sup>[3]</sup>
1.616-38-6 2.210-478-4 3.607-013-00-6 4.01-2119822377-36-XXXX, 01-2119548399-23-XXXX	11	<u><a href="#">dimethyl carbonate</a></u>	Flammable Liquid Category 2; H225 <sup>[3]</sup>
1.75-28-5. 2.200-857-2 3.601-004-00-0, 601-004-01-8 4.01-2119485395-27-XXXX	7	<u><a href="#">iso-butane</a></u>	Flammable Gas Category 1, Gas under Pressure (Liquefied gas); H220, H280, EUH044 <sup>[1]</sup>
1.123-86-4 2.204-658-1 3.607-025-00-1 4.01-2119485493-29-XXXX	6	<u><a href="#">n-butyl acetate</a></u>	Flammable Liquid Category 3, Specific target organ toxicity - single exposure Category 3(narcotic effects); H226, H336, EUH066 <sup>[3]</sup>
1.110-43-0 2.203-767-1 3.606-024-00-3 4.01-2119902391-49-XXXX	6	<u><a href="#">amyl methyl ketone</a></u>	Flammable Liquid Category 3, Acute Toxicity (Inhalation) Category 4, Acute Toxicity (Oral) Category 4; H226, H332, H302 <sup>[3]</sup>
1.108-65-6 2.203-603-9 3.607-195-00-7, 607-251-00-0 4.01-2119475791-29-XXXX	1	<u><a href="#">propylene glycol monomethyl ether acetate, alpha-isomer</a></u>	Flammable Liquid Category 3; H226 <sup>[3]</sup>
<b>Legend:</b>	1. Classified by Chemwatch; 2. Classification drawn from EC Directive 67/548/EEC - Annex I ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L		

## SECTION 4 FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General</b>	<p>In case of cold burns (frost-bite):</p> <ul style="list-style-type: none"> <li>▶ Move casualty into warmth before thawing the affected part; if feet are affected carry if possible</li> <li>▶ Bathe the affected area immediately in luke-warm water (not more than 35 deg C) for 10 to 15 minutes, immersing if possible and without rubbing</li> <li>▶ <b>DO NOT apply hot water or radiant heat.</b></li> <li>▶ Apply a clean, dry, light dressing of 'fluffed-up' dry gauze bandage</li> <li>▶ If a limb is involved, raise and support this to reduce swelling</li> <li>▶ If an adult is involved and where intense pain occurs provide pain killers such as paracetamol</li> <li>▶ Transport to hospital, or doctor</li> <li>▶ Subsequent blackening of the exposed tissue indicates potential of necrosis, which may require amputation.</li> </ul> <p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Remove any adhering solids with industrial skin cleansing cream.</li> <li>▶ <b>DO NOT use solvents.</b></li> <li>▶ Seek medical attention in the event of irritation.</li> </ul> <p>If aerosols come in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold the eyelids apart and flush the eye with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
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	<p>If aerosols, fumes or combustion products are inhaled:</p> <ul style="list-style-type: none"> <li>▶ Remove to fresh air.</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>▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>▶ Transport to hospital, or doctor.</li> <li>▶ Not considered a normal route of entry.</li> </ul>
<b>Eye Contact</b>	<p>If aerosols come in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Immediately hold the eyelids apart and flush the eye with fresh running water.</li> <li>▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>In case of cold burns (frost-bite):</p> <ul style="list-style-type: none"> <li>▶ Move casualty into warmth before thawing the affected part; if feet are affected carry if possible</li> <li>▶ Bathe the affected area immediately in luke-warm water (not more than 35 deg C) for 10 to 15 minutes, immersing if possible and without rubbing</li> <li>▶ <b>DO NOT apply hot water or radiant heat.</b></li> <li>▶ Apply a clean, dry, light dressing of 'fluffed-up' dry gauze bandage</li> <li>▶ If a limb is involved, raise and support this to reduce swelling</li> <li>▶ If an adult is involved and where intense pain occurs provide pain killers such as paracetamol</li> <li>▶ Transport to hospital, or doctor</li> <li>▶ Subsequent blackening of the exposed tissue indicates potential of necrosis, which may require amputation.</li> </ul> <p>If solids or aerosol mists are deposited upon the skin:</p> <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Remove any adhering solids with industrial skin cleansing cream.</li> <li>▶ <b>DO NOT use solvents.</b></li> <li>▶ Seek medical attention in the event of irritation.</li> </ul>
<b>Inhalation</b>	<p>If aerosols, fumes or combustion products are inhaled:</p> <ul style="list-style-type: none"> <li>▶ Remove to fresh air.</li> <li>▶ Lay patient down. Keep warm and rested.</li> </ul>

## SECTION 5 FIREFIGHTING MEASURES

### 5.1. Extinguishing media

- ▶ **DO NOT** use halogenated fire extinguishing agents.
- Metal dust fires need to be smothered with sand, inert dry powders.
- DO NOT USE WATER, CO2 or FOAM.**
- SMALL FIRE:**
- ▶ Water spray, dry chemical or CO2
- LARGE FIRE:**
- ▶ Water spray or fog.

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

<b>Fire Incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Reacts with acids producing flammable / explosive hydrogen (H2) gas</li> <li>▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result</li> </ul>
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### 5.3. Advice for firefighters

<b>Fire Fighting</b>	<p>-----</p> <p>GENERAL</p> <p>-----</p> <ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT disturb burning dust. Explosion may result if dust is stirred into a cloud, by providing oxygen to a large surface of hot metal.</b></li> <li>▶ Containers may explode when heated - Ruptured cylinders may rocket</li> <li>▶ May burn but does not ignite easily.</li> <li>▶ Fire exposed cylinders may vent contents through pressure relief devices thereby increasing vapour concentration.</li> </ul> <p>Decomposition may produce toxic fumes of, carbon monoxide (CO) carbon dioxide (CO2) 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.</p> <ul style="list-style-type: none"> <li>▶ Vented gas is more dense than air and may collect in pits, basements.</li> </ul> <p><b>WARNING: Aerosol containers may present pressure related hazards.</b></p>

## SECTION 6 ACCIDENTAL RELEASE MEASURES

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

See section 8

### 6.2. Environmental precautions

See section 12

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

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of all unprotected personnel and move upwind.</li> <li>▶ Alert Emergency Authority and advise them of the location and nature of hazard.</li> <li>▶ Remove leaking cylinders to a safe place.</li> <li>▶ Fit vent pipes.</li> <li>▶ <b>DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve.</b></li> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> </ul>

### 6.4. Reference to other sections

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

## SECTION 7 HANDLING AND STORAGE

### 7.1. Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> </ul>
<b>Fire and explosion protection</b>	See section 5
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Cylinders should be stored in a purpose-built compound with good ventilation, preferably in the open.</li> <li>▶ Such compounds should be sited and built in accordance with statutory requirements.</li> </ul>

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

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ <b>CARE:</b> Packing of high density product in light weight metal or plastic packages may result in container collapse with product release</li> <li>▶ Heavy gauge metal packages / Heavy gauge metal drums</li> <li>▶ Aerosol dispenser.</li> <li>▶ Check that containers are clearly labelled.</li> </ul>
<b>Storage incompatibility</b>	<p>n-Butyl acetate:</p> <ul style="list-style-type: none"> <li>▶ reacts with water on standing to form acetic acid and n-butyl alcohol</li> <li>▶ reacts violently with strong oxidisers and potassium tert-butoxide</li> <li>▶ is incompatible with caustics, strong acids and nitrates</li> <li>▶ dissolves rubber, many plastics, resins and some coatings</li> </ul> <p>Heptanones:</p> <ul style="list-style-type: none"> <li>▶ react violently with strong oxidisers, aldehydes, nitric acid, perchloric acid</li> <li>▶ form a variety of unstable peroxides following reaction with hydrogen peroxide</li> <li>▶ are incompatible with aliphatic amines, aldehydes, strong bases</li> </ul> <p>Nickel</p> <ul style="list-style-type: none"> <li>▶ is a strong reducing agent</li> <li>▶ may be pyrophoric when dry (dependent on particle size); powders or dusts may ignite spontaneously in air</li> <li>▶ reacts with acids, evolving flammable hydrogen gas</li> <li>▶ reacts violently with ammonia, ammonium nitrate, fluorine, hydrazine, hydrazoic acid, strong oxidisers, nitric acid, peroxyformic acid, potassium, potassium perchlorate, selenium, sulfur (evolves heat, incandescence), titanium and other materials</li> <li>▶ is incompatible with organic solvents, sulfur compounds</li> <li>▶ in reducing atmosphere furnace can react with carbon monoxide forming highly toxic nickel carbonyl gas; under fire conditions may also react in similar manner</li> <li>▶ Raney alloys, containing aluminium, may react with moisture</li> <li>▶ Carbonates are incompatible with cerium compounds, germanium, lead diacetate, magnesium, mercurous chloride, silver nitrate</li> <li>▶ <b>WARNING:</b> Avoid or control reaction with peroxides. All <i>transition metal</i> peroxides should be considered as potentially explosive.</li> <li>▶ Many metals may incandescence, react violently, ignite or react explosively upon addition of concentrated nitric acid.</li> </ul> <p>Butane/ isobutane</p> <ul style="list-style-type: none"> <li>▶ reacts violently with strong oxidisers</li> <li>▶ reacts with acetylene, halogens and nitrous oxides</li> <li>▶ is incompatible with chlorine dioxide, conc. nitric acid and some plastics</li> <li>▶ may generate electrostatic charges, due to low conductivity, in flow or when agitated - these may ignite the vapour.</li> </ul> <p>Ketones in this group:</p> <ul style="list-style-type: none"> <li>▶ are reactive with many acids and bases liberating heat and flammable gases (e.g., H<sub>2</sub>).</li> <li>▶ react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H<sub>2</sub>) and heat.</li> </ul> <p>Propane:</p> <ul style="list-style-type: none"> <li>▶ reacts violently with strong oxidisers, barium peroxide, chlorine dioxide, dichlorine oxide, fluorine etc.</li> <li>▶ liquid attacks some plastics, rubber and coatings</li> <li>▶ may accumulate static charges which may ignite its vapours</li> <li>▶ Avoid reaction with oxidising agents, bases and strong reducing agents.</li> </ul>

Metals exhibit varying degrees of activity. Reaction is reduced in the massive form (sheet, rod, or drop), compared with finely divided forms.

- ▶ Finely divided metal powders develop pyrophoricity when a critical specific surface area is exceeded; this is ascribed to high heat of oxide formation on exposure to air.
- ▶ Safe handling is possible in relatively low concentrations of oxygen in an inert gas.
- ▶ Many metals in elemental form react exothermically with compounds having active hydrogen atoms (such as acids and water) to form flammable hydrogen gas and caustic products.
- ▶ Elemental metals may react with azo/diazo compounds to form explosive products.
- ▶ Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances

### 7.3. Specific end use(s)

See section 1.2

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1. Control parameters

#### DERIVED NO EFFECT LEVEL (DNEL)

Not Available

#### PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs)	nickel	Nickel and its inorganic compounds (except nickel tetracarbonyl): nickel and water-insoluble nickel compounds (as Ni)	0.5 mg/m <sup>3</sup>	Not Available	Not Available	Sk, Carc (nickeloxides and sulphides)Sen (nickel sulphate)
UK Workplace Exposure Limits (WELs)	acetone	Acetone	1210 mg/m <sup>3</sup> / 500 ppm	3620 mg/m <sup>3</sup> / 1500 ppm	Not Available	Not Available
European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (English)	acetone	Acetone	1 210 mg/m <sup>3</sup> / 500 ppm	Not Available	Not Available	Not Available
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	acetone	Acetone	1210 mg/m <sup>3</sup> / 500 ppm	Not Available	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	n-butyl acetate	Butyl acetate	724 mg/m <sup>3</sup> / 150 ppm	966 mg/m <sup>3</sup> / 200 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	amyl methyl ketone	Heptan-2-one	237 mg/m <sup>3</sup> / 50 ppm	475 mg/m <sup>3</sup> / 100 ppm	Not Available	Sk
European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (English)	amyl methyl ketone	Heptan-2-one	238 mg/m <sup>3</sup> / 50 ppm	475 mg/m <sup>3</sup> / 100 ppm	Not Available	Skin
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	amyl methyl ketone	Heptan-2-one	238 mg/m <sup>3</sup> / 50 ppm	475 mg/m <sup>3</sup> / 100 ppm	Not Available	Skin
UK Workplace Exposure Limits (WELs)	propylene glycol monomethyl ether acetate, alpha-isomer	1-Methoxypropyl acetate	274 mg/m <sup>3</sup> / 50 ppm	548 mg/m <sup>3</sup> / 100 ppm	Not Available	Sk
European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (English)	propylene glycol monomethyl ether acetate, alpha-isomer	2-Methoxy-1-methylethylacetate	275 mg/m <sup>3</sup> / 50 ppm	550 mg/m <sup>3</sup> / 100 ppm	Not Available	Skin
EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)	propylene glycol monomethyl ether acetate, alpha-isomer	1-Methoxypropyl-2-acetate	275 mg/m <sup>3</sup> / 50 ppm	550 mg/m <sup>3</sup> / 100 ppm	Not Available	Skin

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## EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
nickel	Nickel	4.5 mg/m3	50 mg/m3	99 mg/m3
acetone	Acetone	Not Available	Not Available	Not Available
propane	Propane	Not Available	Not Available	Not Available
dimethyl carbonate	Dimethyl carbonate	11 ppm	120 ppm	700 ppm
iso-butane	Methylpropane, 2-; (Isobutane)	800 ppm	800 ppm	4000 ppm
n-butyl acetate	Butyl acetate, n-	Not Available	Not Available	Not Available
amyl methyl ketone	Methyl n-amyl ketone	50 ppm	50 ppm	4000 ppm
propylene glycol monomethyl ether acetate, alpha-isomer	Propylene glycol monomethyl ether acetate, alpha-isomer; (1-Methoxypropyl-2-acetate)	Not Available	Not Available	Not Available
propylene glycol monomethyl ether acetate, alpha-isomer	Propylene glycol monomethyl ether acetate, beta-isomer; (2-Methoxypropyl-1-acetate)	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
nickel	N.E. mg/m3 / N.E. ppm	10 mg/m3
acetone	20,000 ppm	2,500 [LEL] ppm
propane	20,000 [LEL] ppm	2,100 [LEL] ppm
dimethyl carbonate	Not Available	Not Available
iso-butane	Not Available	Not Available
n-butyl acetate	10,000 ppm	1,700 [LEL] ppm
amyl methyl ketone	4,000 ppm	800 ppm
propylene glycol monomethyl ether acetate, alpha-isomer	Not Available	Not Available

## MATERIAL DATA

Odour Threshold Value: 3.6 ppm (detection), 699 ppm (recognition)

NOTE: Detector tubes measuring in excess of 40 ppm, are available.

Exposure at or below the recommended TLV-TWA is thought to protect the worker against mild irritation associated with brief exposures and the bioaccumulation, chronic irritation of the respiratory tract and headaches associated with long-term acetone exposures.

For n-butyl acetate

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

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

for propylene glycol monomethyl ether acetate (PGMEA)

Saturated vapour concentration: 4868 ppm at 20 C.

A two-week inhalation study found nasal effects to the nasal mucosa in animals at concentrations up to 3000 ppm.

For propane

Odour Safety Factor(OSF)

OSF=0.16 (PROPANE)

For amyl methyl ketone:

Odour Threshold Value: 0.18 ppm (detection)

The TLV-TWA is well below the highest level of vapour (1025 ppm) reported to be associated with adverse effects in animals including dermal irritation.

Odour Safety Factor (OSF)

OSF=1.4E2 (2-HEPTANONE)

## 8.2. Exposure controls

<b>8.2.1. Appropriate engineering controls</b>	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.
<b>8.2.2. Personal protection</b>	
<b>Eye and face protection</b>	No special equipment for minor exposure i.e. when handling small quantities. <b>OTHERWISE:</b> For potentially moderate or heavy exposures: ▶ Safety glasses with side shields.
<b>Skin protection</b>	See Hand protection below

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<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>▶ No special equipment needed when handling small quantities.</li> <li>▶ <b>OTHERWISE:</b></li> <li>▶ For potentially moderate exposures:</li> <li>▶ Wear general protective gloves, eg. light weight rubber gloves.</li> <li>▶ Insulated gloves:</li> </ul> <p>NOTE: Insulated gloves should be loose fitting so that may be removed quickly if liquid is spilled upon them. Insulated gloves are not made to permit hands to be placed in the liquid; they provide only short-term protection from accidental contact with the liquid.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>▶ Overalls.</li> </ul>
<b>Thermal hazards</b>	Not Available

## Recommended material(s)

### GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

**'Forsberg Clothing Performance Index'.**

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

841AR Super Shield Nickel Conductive Coating (Aerosol)

Material	CPI
PE/EVAL/PE	A
TEFLON	B
BUTYL	C
BUTYL/NEOPRENE	C
CPE	C
HYPALON	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PE	C
PVA	C
PVC	C
PVDC/PE/PVDC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
VITON/BUTYL	C
VITON/NEOPRENE	C

\* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

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

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

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

### 8.2.3. Environmental exposure controls

See section 12

## Respiratory protection

Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that 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.





## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

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

<b>Appearance</b>	Dark grey		
<b>Physical state</b>	Liquified Gas	<b>Relative density (Water = 1)</b>	1.3
<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>	>315
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	61
<b>Initial boiling point and boiling range (°C)</b>	>56	<b>Molecular weight (g/mol)</b>	Not Available
<b>Flash point (°C)</b>	-17	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	HIGHLY FLAMMABLE.	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	13	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	2	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	10	<b>Gas group</b>	Not Available
<b>Solubility in water (g/L)</b>	Partly miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	>2	<b>VOC g/L</b>	Not Available

### 9.2. Other information

Not Available

## SECTION 10 STABILITY AND REACTIVITY

<b>10.1. Reactivity</b>	See section 7.2
<b>10.2. Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Elevated temperatures.</li> <li>▶ Presence of open flame.</li> </ul>
<b>10.3. Possibility of hazardous reactions</b>	See section 7.2
<b>10.4. Conditions to avoid</b>	See section 7.2
<b>10.5. Incompatible materials</b>	See section 7.2
<b>10.6. Hazardous decomposition products</b>	See section 5.3

## SECTION 11 TOXICOLOGICAL INFORMATION

### 11.1. Information on toxicological effects

<b>Inhaled</b>	<p>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.</p> <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage.</p> <p>Common, generalised symptoms associated with toxic gas inhalation include:</p> <ul style="list-style-type: none"> <li>▶ central nervous system effects such as depression, headache, confusion, dizziness, progressive stupor, coma and seizures;</li> <li>▶ respiratory system complications may include acute pulmonary oedema, dyspnoea, stridor, tachypnoea, bronchospasm, wheezing and other reactive airway symptoms, and respiratory arrest;</li> <li>▶ cardiovascular effects may include cardiovascular collapse, arrhythmias and cardiac arrest;</li> <li>▶ gastrointestinal effects may also be present and may include mucous membrane irritation, nausea and vomiting (sometimes bloody), and abdominal pain.</li> </ul>
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# Safety Data Sheet



	<p>Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant.</p> <p>The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.</p> <p><b>WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.</b></p> <p>The paraffin gases C1-4 are practically nontoxic below the lower flammability limit, 18,000 to 50,000 ppm; above this, low to moderate incidental effects such as CNS depression and irritation occur, but are completely reversible upon cessation of the exposure.</p>																
<b>Ingestion</b>	<p>Not normally a hazard due to physical form of product.</p> <p>Considered an unlikely route of entry in commercial/industrial environments</p>																
<b>Skin Contact</b>	<p>The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.</p> <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Spray mist may produce discomfort</p> <p>Vapourising liquid causes rapid cooling and contact may cause cold burns, frostbite, even through normal gloves. Frozen skin tissues are painless and appear waxy and yellow.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>																
<b>Eye</b>	<p>Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).</p> <p>Direct contact with the eye may not cause irritation because of the extreme volatility of the gas; however concentrated atmospheres may produce irritation after brief exposures..</p>																
<b>Chronic</b>	<p>On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.</p> <p>Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation.</p> <p>Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions.</p> <p>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.</p> <p>Principal route of occupational exposure to the gas is by inhalation.</p> <p>Metallic dusts generated by the industrial process give rise to a number of potential health problems. The larger particles, above 5 micron, are nose and throat irritants.</p>																
<b>841AR Super Shield Nickel Conductive Coating (Aerosol)</b>	<table border="1"> <thead> <tr> <th>TOXICITY</th> <th>IRRITATION</th> </tr> </thead> <tbody> <tr> <td>Not Available</td> <td>Not Available</td> </tr> </tbody> </table>	TOXICITY	IRRITATION	Not Available	Not Available												
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# Safety Data Sheet



	Inhalation (rat) LC50: 570000 ppm15 min <sup>[1]</sup>	
dimethyl carbonate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[1]</sup>	Nil reported
	Oral (rat) LD50: >5000 mg/kg <sup>[1]</sup>	
iso-butane	<b>TOXICITY</b>	<b>IRRITATION</b>
	Inhalation (rat) LC50: 658 mg/L/4hr <sup>[2]</sup>	Not Available
n-butyl acetate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >14080 mg/kg <sup>[1]</sup>	* [PPG]
	Inhalation (rat) LC50: 2000 ppm/4hr <sup>[2]</sup>	Eye (human): 300 mg
	Inhalation (rat) LC50: 390 ppm/4hr <sup>[2]</sup>	Eye (rabbit): 20 mg (open)-SEVERE
	Oral (rat) LD50: 10736 mg/kg <sup>[1]</sup>	Eye (rabbit): 20 mg/24h - moderate
		Skin (rabbit): 500 mg/24h-moderate
amyl methyl ketone	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: 12600 mg/kg <sup>[2]</sup>	Skin (rabbit): 14 mg/24h Mild
	Inhalation (rat) LC50: 4000 ppm/4hr <sup>[2]</sup>	Skin (rabbit): Primary Irritant
	Oral (rat) LD50: 1670 mg/kg <sup>[2]</sup>	
propylene glycol monomethyl ether acetate, alpha-isomer	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	* [CCINFO]
	Inhalation (rat) LC50: 4345 ppm/6hr <sup>[2]</sup>	Nil reported
	Oral (rat) LD50: >14.1 ml <sup>[1]</sup>	

**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

NICKEL	<b>WARNING:</b> This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans. Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen [National Toxicology Program: U.S. Dep. of Health & Human Services 2002] Oral (rat) TDLo: 500 mg/kg/5D-I Inhalation (rat) TCLo: 0.1 mg/m <sup>3</sup> /24H/17W-C
ACETONE	for acetone: The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitiser but is a defatting agent to the skin.
PROPANE	No significant acute toxicological data identified in literature search.
N-BUTYL ACETATE	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 a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis.
PROPYLENE GLYCOL MONOMETHYL ETHER ACETATE, ALPHA-ISOMER	for propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butylether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methylether acetate (DPMA); tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series. A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. A BASF report (in ECETOC) showed that inhalation exposure to 545 ppm PGMEA (beta isomer) was associated with a teratogenic response in rabbits; but exposure to 145 ppm and 36 ppm had no adverse effects. The beta isomer of PGMEA comprises only 10% of the commercial material, the remaining 90% is alpha isomer. Hazard appears low but emphasizes the need for care in handling this chemical. *Shin-Etsu SDS

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<b>841AR Super Shield Nickel Conductive Coating (Aerosol) &amp; NICKEL</b>	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema.		
<b>ACETONE &amp; AMYL METHYL KETONE</b>	The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis.		
<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 available but does not fill the criteria for classification  
**✓** – Data required to make classification available  
**☹** – Data Not Available to make classification

## SECTION 12 ECOLOGICAL INFORMATION

### 12.1. Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
nickel	LC50	96	Fish	0.0000475mg/L	4
nickel	EC50	48	Crustacea	0.013mg/L	5
nickel	EC50	72	Algae or other aquatic plants	0.0407mg/L	2
nickel	BCF	1440	Algae or other aquatic plants	0.47mg/L	4
nickel	EC50	72	Crustacea	0.00513mg/L	2
nickel	NOEC	72	Algae or other aquatic plants	0.0035mg/L	2
acetone	LC50	96	Fish	>100mg/L	4
acetone	EC50	48	Crustacea	>100mg/L	4
acetone	EC50	96	Algae or other aquatic plants	20.565mg/L	4
acetone	EC50	384	Crustacea	97.013mg/L	3
acetone	NOEC	96	Algae or other aquatic plants	4.950mg/L	4
propane	LC50	96	Fish	10.307mg/L	3
propane	EC50	96	Algae or other aquatic plants	7.71mg/L	2
propane	EC50	384	Crustacea	2.462mg/L	3
dimethyl carbonate	LC50	96	Fish	>=100mg/L	2
dimethyl carbonate	EC50	48	Crustacea	>74.16mg/L	2
dimethyl carbonate	EC50	96	Algae or other aquatic plants	9.000mg/L	3
dimethyl carbonate	EC50	72	Algae or other aquatic plants	>57.29mg/L	2
dimethyl carbonate	NOEC	504	Crustacea	25mg/L	2
iso-butane	LC50	96	Fish	6.706mg/L	3
iso-butane	EC50	96	Algae or other aquatic plants	7.71mg/L	2
iso-butane	EC50	384	Crustacea	1.617mg/L	3
n-butyl acetate	LC50	96	Fish	18mg/L	2
n-butyl acetate	EC50	48	Crustacea	=32mg/L	1
n-butyl acetate	EC50	96	Algae or other aquatic plants	1.675mg/L	3
n-butyl acetate	EC50	96	Fish	18mg/L	2
n-butyl acetate	NOEC	504	Crustacea	23mg/L	2
amyl methyl ketone	LC50	96	Fish	30.530mg/L	3
amyl methyl ketone	EC50	48	Crustacea	>90.1mg/L	2
amyl methyl ketone	EC50	72	Algae or other aquatic plants	75.5mg/L	2
amyl methyl ketone	EC50	384	Crustacea	7.278mg/L	3
amyl methyl ketone	NOEC	72	Algae or other aquatic plants	42.68mg/L	2



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propylene glycol monomethyl ether acetate, alpha-isomer	LC50	96	Fish	100mg/L	1
propylene glycol monomethyl ether acetate, alpha-isomer	EC50	48	Crustacea	373mg/L	2
propylene glycol monomethyl ether acetate, alpha-isomer	EC50	96	Algae or other aquatic plants	9.337mg/L	3
propylene glycol monomethyl ether acetate, alpha-isomer	EC50	504	Crustacea	>100mg/L	2
propylene glycol monomethyl ether acetate, alpha-isomer	NOEC	336	Fish	47.5mg/L	2

**Legend:**

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water.

For isobutane:

Refrigerant Gas: Saturated Hydrocarbons have zero ozone depletion potential (ODP) and will photodegrade under atmospheric conditions. [Calor Gas]

**Environmental Fate**

**Terrestrial fate:** An estimated Koc value of 35 suggests that isobutane will have very high mobility in soil.

For propane:

**Environmental Fate**

**Terrestrial fate:** An estimated Koc value of 460 determined from a log Kow of 2.36 indicates that propane is expected to have moderate mobility in soil. Volatilisation of propane from moist soil surfaces is expected to be an important fate process given an estimated Henry's Law constant of  $7.07 \times 10^{-1}$  atm-cu m/mole, derived from its vapor pressure, 7150 mm Hg, and water solubility, 62.4 mg/L.

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

for acetone:

log Kow: -0.24

Half-life (hr) air: 312-1896

Half-life (hr) H<sub>2</sub>O surface water: 20

Henry's atm m<sup>3</sup>/mol: 3.67E-05

BOD 5: 0.31-1.76, 46-55%

COD: 1.12-2.07

ThOD: 2.2

BCF: 0.69

**Environmental fate:**

Acetone preferentially locates in the air compartment when released to the environment. A substantial amount of acetone can also be found in water, which is consistent with the high water to air partition coefficient and its small, but detectable, presence in rain water, sea water, and lake water samples.

For n-butyl acetate:

Half-life (hr) air : 144

Half-life (hr) H<sub>2</sub>O surface water : 178-27156

Henry's atm m<sup>3</sup>/mol: 3.20E-04

BOD 5 if unstated: 0.15-1.02, 7%

COD : 78%

ThOD : 2.207

BCF : 4-14

**Environmental Fate:**

**TERRESTRIAL FATE:** An estimated Koc value of 200 determined from a measured log Kow of 1.78 indicates that n-butyl acetate is expected to have moderate mobility in soil. Volatilisation of n-butyl acetate is expected from moist soil surfaces given its Henry's Law constant of  $2.6 \times 10^{-4}$  atm-cu m/mole.

**12.2. Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
acetone	LOW (Half-life = 14 days)	MEDIUM (Half-life = 116.25 days)
propane	LOW	LOW
dimethyl carbonate	HIGH	HIGH
iso-butane	HIGH	HIGH
n-butyl acetate	LOW	LOW
amyl methyl ketone	LOW	LOW
propylene glycol monomethyl ether acetate, alpha-isomer	LOW	LOW



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## 12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
acetone	LOW (BCF = 0.69)
propane	LOW (LogKOW = 2.36)
dimethyl carbonate	LOW (LogKOW = 0.2336)
iso-butane	LOW (BCF = 1.97)
n-butyl acetate	LOW (BCF = 14)
amyl methyl ketone	LOW (LogKOW = 1.98)
propylene glycol monomethyl ether acetate, alpha-isomer	LOW (LogKOW = 0.56)

## 12.4. Mobility in soil

Ingredient	Mobility
acetone	HIGH (KOC = 1.981)
propane	LOW (KOC = 23.74)
dimethyl carbonate	LOW (KOC = 8.254)
iso-butane	LOW (KOC = 35.04)
n-butyl acetate	LOW (KOC = 20.86)
amyl methyl ketone	LOW (KOC = 24.01)
propylene glycol monomethyl ether acetate, alpha-isomer	HIGH (KOC = 1.838)

## 12.5. Results of PBT and vPvB assessment

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

## 12.6. Other adverse effects

No data available

## SECTION 13 DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"><li>▶ <b>DO NOT allow wash water from cleaning or process equipment to enter drains.</b></li><li>▶ It may be necessary to collect all wash water for treatment before disposal.</li><li>▶ Consult State Land Waste Management Authority for disposal.</li><li>▶ Discharge contents of damaged aerosol cans at an approved site.</li></ul>
<b>Waste treatment options</b>	Not Available
<b>Sewage disposal options</b>	Not Available

## SECTION 14 TRANSPORT INFORMATION

### Labels Required


### Land transport (ADR)

<b>14.1.UN number</b>	1950
<b>14.2.UN proper shipping name</b>	AEROSOLS

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<b>14.3. Transport hazard class(es)</b>	Class	2.1
	Subrisk	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Hazard identification (Kemler)	Not Applicable
	Classification code	5F
	Hazard Label	2.1
	Special provisions	190 327 344 625
	Limited quantity	1 L

## Air transport (ICAO-IATA / DGR)

<b>14.1. UN number</b>	1950	
<b>14.2. UN proper shipping name</b>	Aerosols, flammable	
<b>14.3. Transport hazard class(es)</b>	ICAO/IATA Class	2.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	10L
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	Special provisions	A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

## Sea transport (IMDG-Code / GGVSee)

<b>14.1. UN number</b>	1950	
<b>14.2. UN proper shipping name</b>	AEROSOLS	
<b>14.3. Transport hazard class(es)</b>	IMDG Class	2.1
	IMDG Subrisk	Not Applicable
<b>14.4. Packing group</b>	Not Applicable	
<b>14.5. Environmental hazard</b>	Not Applicable	
<b>14.6. Special precautions for user</b>	EMS Number	F-D, S-U
	Special provisions	63 190 277 327 344 959
	Limited Quantities	1000ml

## Inland waterways transport (ADN)

<b>14.1. UN number</b>	1950	
<b>14.2. UN proper shipping name</b>	AEROSOLS	

# Safety Data Sheet



<b>14.3. Transport hazard class(es)</b>	2.1 Not Applicable										
<b>14.4. Packing group</b>	Not Applicable										
<b>14.5. Environmental hazard</b>	Not Applicable										
<b>14.6. Special precautions for user</b>	<table border="1"><tr><td>Classification code</td><td>5F</td></tr><tr><td>Special provisions</td><td>190; 327; 344; 625</td></tr><tr><td>Limited quantity</td><td>1 L</td></tr><tr><td>Equipment required</td><td>PP, EX, A</td></tr><tr><td>Fire cones number</td><td>1</td></tr></table>	Classification code	5F	Special provisions	190; 327; 344; 625	Limited quantity	1 L	Equipment required	PP, EX, A	Fire cones number	1
Classification code	5F										
Special provisions	190; 327; 344; 625										
Limited quantity	1 L										
Equipment required	PP, EX, A										
Fire cones number	1										

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

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

#### NICKEL(7440-02-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles  
European Customs Inventory of Chemical Substances ECICS (English)  
European Trade Union Confederation (ETUC) Priority List for REACH Authorisation  
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31  
European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances (updated by ATP: 31) - Carcinogenic Substances  
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI  
UK Workplace Exposure Limits (WELs)

#### ACETONE(67-64-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS

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

#### PROPANE(74-98-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

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

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





European Trade Union Confederation (ETUC) Priority List for REACH Authorisation  
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)  
European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31

Dangerous Substances (updated by ATP: 31) - Mutagenic Substances  
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI  
International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

#### **DIMETHYL CARBONATE(616-38-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles  
European Customs Inventory of Chemical Substances ECICS (English)  
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31  
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI

#### **ISO-BUTANE(75-28-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles  
EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 1) Carcinogens: category 1A (Table 3.1)/category 1 (Table 3.2)  
EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 4) Mutagens: category 1B (Table 3.1)/category 2 (Table 3.2)  
European Customs Inventory of Chemical Substances ECICS (English)  
European Trade Union Confederation (ETUC) Priority List for REACH Authorisation  
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31  
European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances (updated by ATP: 31) - Carcinogenic Substances  
European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances (updated by ATP: 31) - Mutagenic Substances  
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI  
International Air Transport Association (IATA) Dangerous Goods Regulations - Prohibited List Passenger and Cargo Aircraft

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

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles  
European Customs Inventory of Chemical Substances ECICS (English)  
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31  
European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI  
UK Workplace Exposure Limits (WELs)

#### **AMYL METHYL KETONE(110-43-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

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

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

EU Consolidated List of Indicative Occupational Exposure Limit Values (IOELVs)  
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  
EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 6) Toxic to reproduction: category 1B (Table 3.1)/category 2 (Table 3.2)  
Europe AeroSpace and Defence Industries Association of Europe (ASD) REACH

European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (German)  
European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Greek)  
European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Hungarian)

# Safety Data Sheet



Implementation Working Group Priority Declarable Substances List (PDSL)

European Customs Inventory of Chemical Substances ECICS (English)

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

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

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

European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Bulgarian)

European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Czech)

European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Danish)

European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Dutch)

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European Union (EU) First List of Indicative Occupational Exposure Limit Values (IOELVs) (Swedish)

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

UK Workplace Exposure Limits (WELs)

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

## 15.2. Chemical safety assessment

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

### ECHA SUMMARY

Ingredient	CAS number	Index No	ECHA Dossier
nickel	7440-02-0	028-002-00-7, 028-002-01-4	01-2119438727-29-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
2	Not Classified, Skin Sens. 1, Resp. Sens. 1, Carc. 2, STOT RE 1, Carc. 1A, Aquatic Chronic 3, Skin Sens. 1A, Aquatic Acute 1, Aquatic Acute 3, Flam. Sol. 1, Aquatic Chronic 1	GHS08, Dgr, GHS09, Wng, GHS02	H317, H372, H334, H350, H315, H228, H251, H250
2	Skin Corr. 1B, Skin Sens. 1, Carc. 2	GHS05, GHS08, Dgr	H314, H317, H351
2	Not Classified, Skin Sens. 1, Resp. Sens. 1, Carc. 2, STOT RE 1, Carc. 1A, Aquatic Chronic 3, Skin Sens. 1A, Aquatic Acute 1, Aquatic Acute 3, Flam. Sol. 1, Aquatic Chronic 1	GHS08, Dgr, GHS09, Wng, GHS02	H317, H372, H334, H350, H315, H228, H251, H250
1	Pyr. Sol. 1, Skin Sens. 1, Carc. 2, STOT RE 1, Aquatic Chronic 2	GHS07, GHS02, GHS06, GHS09, Dgr	H250, H317, H351, H372
2	Pyr. Sol. 1, Skin Sens. 1, Carc. 2, STOT RE 1, Aquatic Chronic 2	GHS02, GHS06, GHS09, Dgr	H250, H317, H351, H372
1	Skin Sens. 1, Carc. 2, STOT RE 1, Aquatic Chronic 3	GHS07, GHS08, Dgr	H317, H351, H372
2	Skin Sens. 1, Carc. 2, STOT RE 1, Aquatic Chronic 3	GHS08, Dgr	H317, H351, H372
1	Skin Sens. 1, Carc. 2	GHS07, GHS08, Wng	H317, H351
2	Skin Sens. 1, Carc. 2	GHS08, Wng	H317, H351
1	Skin Corr. 1B, Skin Sens. 1, Carc. 2	GHS07, GHS05, GHS08, Dgr	H314, H317, H351

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

Ingredient	CAS number	Index No	ECHA Dossier
acetone	67-64-1	606-001-00-8	01-2119498062-37-XXXX, 01-2119471330-49-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3	GHS07, GHS02, Dgr	H225, H319, H336
2	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3, Flam. Liq. 3, Not Classified, Eye Irrit. 2A	Dgr, GHS01, Wng, GHS08, GHS06	H225, H319, H336, H371, H228, H315, H335, H312, H332, H340, H302



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1	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3	GHS07, GHS02, Dgr	H225, H319, H336
2	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3	GHS07, GHS02, Dgr	H225, H319, H336

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

Ingredient	CAS number	Index No	ECHA Dossier
propane	74-98-6	601-003-00-5	01-2119486944-21-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Gas 1	GHS02, GHS04, Dgr	H220
2	Flam. Gas 1, Liq. Gas, Press. Gas., Acute Tox. 2, Skin Irrit. 2, Eye Irrit. 2, Acute Tox. 4, STOT SE 3, Muta. 1B, Carc. 1A, Carc. 2, STOT SE 1, Carc. 1B	GHS02, GHS04, Dgr, GHS03, GHS06, GHS08, Wng	H220, H280, H330, H315, H319, H335, H340, H350, H370, H223

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

Ingredient	CAS number	Index No	ECHA Dossier
dimethyl carbonate	616-38-6	607-013-00-6	01-2119822377-36-XXXX, 01-2119548399-23-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 2	GHS02, Dgr	H225
2	Flam. Liq. 2	GHS02, Dgr	H225, H335, H351, H334, H319, H373, H315, H317

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

Ingredient	CAS number	Index No	ECHA Dossier
iso-butane	75-28-5.	601-004-00-0, 601-004-01-8	01-2119485395-27-XXXX

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Gas 1	GHS02, GHS04, Dgr	H220
2	Flam. Gas 1, Liq. Gas, Muta. 1B, Carc. 1A, Press. Gas., STOT SE 3, Flam. Gas 2, STOT SE 1	GHS04, Dgr, GHS08, GHS01, Wng	H220, H280, H340, H350, H336, H370, H223
1	Flam. Gas 1	GHS02, GHS04, Dgr	H220
2	Flam. Gas 1, Liq. Gas, Muta. 1B, Carc. 1A, Press. Gas., STOT SE 3, Flam. Gas 2, STOT SE 1	GHS04, Dgr, GHS08, GHS01, Wng	H220, H280, H340, H350, H336, H370, H223

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

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

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Flam. Liq. 3, STOT SE 3	GHS07, GHS02, Wng	H226, H336
2	Flam. Liq. 3, STOT SE 3, Aquatic Chronic 1, Flam. Liq. 2, Skin Irrit. 2, Eye Irrit. 2, Acute Tox. 2, Not Classified, Acute Tox. 4, Aquatic Chronic 2	Wng, GHS01, Dgr, GHS06, GHS08	H336, H319, H225, H315, H330, H335, H317

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

Ingredient	CAS number	Index No	ECHA Dossier
amyl methyl ketone	110-43-0	606-024-00-3	01-2119902391-49-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	GHS07, GHS02, Wng	H226, H302, H332
2	Flam. Liq. 3, Acute Tox. 4, STOT SE 3, Not Classified	GHS07, Wng, GHS01	H226, H302, H332, H336

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

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

# Safety Data Sheet



Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
2	Flam. Liq. 3, Eye Irrit. 2, Eye Dam. 1, Not Classified, STOT SE 3, Repr. 1B, Repr. 1A	GHS02, Wng, GHS03, GHS05, Dgr, GHS08	H226, H319, H335, H336, H360, H370

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

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
Canada - NDSL	N (propylene glycol monomethyl ether acetate, alpha-isomer; acetone; n-butyl acetate; dimethyl carbonate; nickel; propane; iso-butane; amyl methyl ketone)
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	N (nickel)
Korea - KECI	Y
New Zealand - NZIoC	Y
Philippines - PICCS	Y
USA - TSCA	Y

**Legend:**  
Y = All ingredients are on the inventory  
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)

## SECTION 16 OTHER INFORMATION

### Full text Risk and Hazard codes

H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H228	Flammable solid.
H250	Catches fire spontaneously if exposed to air.
H251	Self-heating: may catch fire.
H280	Contains gas under pressure; may explode if heated.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H330	Fatal if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.

### Other information

#### Ingredients with multiple cas numbers

Name	CAS No
propylene glycol monomethyl ether acetate, alpha-isomer	108-65-6, 84540-57-8, 142300-82-1

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

# Safety Data Sheet



A list of reference resources used to assist the committee may be found at:

[www.chemwatch.net](http://www.chemwatch.net)

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.

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

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

<b>Part Number</b>
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