Restec Liquid Catalyst

Res-Tec Limited

Version No: **4.6**
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Issue Date: **10/04/2023**
Print Date: **21/06/2023**
S.REACH.GB-NIR.EN

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

1.1. Product Identifier

Product name	Restec Liquid Catalyst
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	ORGANIC PEROXIDE TYPE D, LIQUID (contains methyl ethyl ketone peroxide)
Chemical formula	Not Applicable
Other means of identification	Not Available

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

Sectors of Use	SU22	Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
	SU3	Industrial uses: Uses of substances as such or in preparations* at industrial sites
Relevant identified uses	Liquid peroxide catalyst for use with GRP Roof system	
Uses advised against	Sectors of Use - SU21	Consumer uses: Private households (= general public = consumers)

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	**Res-Tec Limited**
Address	Unit 25, Castle Industrial Estate Flint, Flintshire CH6 5XA United Kingdom
Telephone	0845 4504 193
Fax	Not Available
Website	www.restecroofing.co.uk
Email	technical@restecroofing.co.uk

1.4. Emergency telephone number

Association / Organisation	**NPIS**
Emergency telephone numbers	0344 892 0111 (24 hours)
Other emergency telephone numbers	0845 4504 193 (normal working day only)

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classification according to	H242 - Organic Peroxides Type D, H314 - Skin Corrosion/Irritation Category 1C, H318 - Serious Eye Damage/Eye Irritation

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regulation (EC) No 1272/2008 [CLP] and amendments [1]	Category 1, H332 - Acute Toxicity (Inhalation) Category 4, H302 - Acute Toxicity (Oral) Category 4
Legend:	*1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI*

2.2. Label elements

Hazard pictogram(s)	
Signal word	**Danger**

Hazard statement(s)

H242	Heating may cause a fire.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
H302	Harmful if swallowed.

Supplementary statement(s)

EUH208	Contains methyl ethyl ketone peroxide. May produce an allergic reaction.

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234	Keep only in original packaging.
P235	Keep cool.
P240	Ground and bond container and receiving equipment.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
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.

Precautionary statement(s) Storage

P403	Store in a well-ventilated place.
P405	Store locked up.
P411	Store at temperatures not exceeding ...°C/...°F.
P410	Protect from sunlight.

Precautionary statement(s) Disposal

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

2.3. Other hazards

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

SECTION 3 Composition / information on ingredients

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2.EC No	%[weight]	Name	Classification according to regulation (EC) No 1272/2008	SCL / M-Factor	Nanoform Particle

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3.Index No 4.REACH No			[CLP] and amendments		Characteristics
1. 1338-23-4 2.215-661-2 3.617-021-00-1 4.01-2119514691-43	30-35	methyl ethyl ketone peroxide	Organic Peroxides Type B, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Aspiration Hazard Category 1; H241, H315, H317, H304 [2]	Not Available	Not Available
1. 7722-84-1 2.231-765-0 3.008-003-00-9 4.01-2119485845-22	1-<2.5	hydrogen peroxide	Oxidizing Liquids Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 1A; H271, H302, H332, H314 [2]	Ox. Liq. 1; H271: C ≥ 70 %**** | Ox. Liq. 2; H272: 50 % ≤ C < 70 % **** | * Skin Corr. 1A; H314: C ≥ 70 % | Skin Corr. 1B; H314: 50 % ≤ C < 70 % | Skin Irrit. 2; H315: 35 % ≤ C < 50 % | Eye Dam. 1; H318: 8 % ≤ C < 50 % | Eye Irrit. 2; H319: 5 % ≤ C < 8 % | STOT SE 3; H335: C ≥ 35 %	Not Available
1. 107-41-5 2.203-489-0 3.603-053-00-3 4.01-2119539582-35	1-<3	hexylene glycol	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2; H315, H319 [2]	Not Available	Not Available

Legend:	*1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties*

SECTION 4 First aid measures

4.1. Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold the eyelids apart and flush the eye with 2% sodium carbonate solution or 5% sodium ascorbate solution then wash continuously for at least 15 minutes with fresh 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. ▸ Transport to hospital (or doctor) without further delay. ▸ Removal of contact lenses should only be undertaken by trained personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
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.
Ingestion	▸ Immediately give a glass of water. ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. ▸ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

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

Treat symptomatically.

Hydrogen peroxide at moderate concentrations (5% or more) is a strong oxidant.

- Direct contact with the eye is likely to cause corneal damage especially if not washed immediately. Careful ophthalmologic evaluation is recommended and the possibility of local corticosteroid therapy should be considered.
- Because of the likelihood of systemic effects attempts at evacuating the stomach via emesis induction or gastric lavage should be avoided.
- There is remote possibility, however, that a nasogastric or orogastric tube may be required for the reduction of severe distension due to gas formation"

Fisher Scientific SDS

SECTION 5 Firefighting measures

5.1. Extinguishing media

For hydrogen peroxide

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NOTE: Chemical extinguishing agents may accelerate decomposition. [CCINFO]
FOR SMALL FIRE:
- Water spray, foam, CO2 or dry chemical.
- **DO NOT** use water jets.

FOR LARGE FIRE:
- Flood fire area with water from a distance.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	‣ Avoid storage with reducing agents. ‣ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous

5.3. Advice for firefighters

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. ‣ Prevent, by any means available, spillage from entering drains or water courses.
Fire/Explosion Hazard	‣ Will not burn but increases intensity of fire. ‣ May explode from friction, shock, heat or containment. ‣ Heating may cause expansion or decomposition leading to violent rupture of containers. ‣ Heat affected containers remain hazardous. Decomposes on heating and produces acrid and toxic fumes of: Combustion products include: , carbon dioxide (CO2) , other pyrolysis products typical of burning organic material. ‣ Organic peroxides provide internal oxygen for combustion, so burn intensely. ‣ Simple smothering actions are not effective against established fires. NOTE: A Type D Organic Peroxide: ‣ may partially detonate ‣ does not deflagrate rapidly and ‣ shows no violent effect when heated under confinement

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

Minor Spills	**WARNING!: EXPLOSIVE**. BLAST and/or PROJECTION and/or FIRE HAZARD ‣ Clean up all spills immediately. ‣ Avoid inhalation of the material and avoid contact with eyes and skin. ‣ Wear impervious gloves and safety glasses.
Major Spills	**WARNING!**: EXPLOSIVE. ‣ Clear area of personnel and move upwind. ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ May be violently or explosively reactive. For hydrogen peroxide: ‣ Dilute with large quantities of water (at least ten (10) times the volume of hydrogen peroxide). ‣ Sodium bicarbonate may be used to accelerate breakdown.

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

Safe handling	‣ Handle gently. Use good occupational work practice. ‣ Observe manufacturer's storage and handling recommendations contained within this SDS. ‣ Avoid all personal contact, including inhalation.

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	‣ Mix only as much as is required ‣ **DO NOT** return the mixed material to original containers For oxidisers, including peroxides. · Avoid personal contact and inhalation of dust, mist or vapours. · Provide adequate ventilation. · Always wear protective equipment and wash off any spillage from clothing.
Fire and explosion protection	See section 5
Other information	‣ Store in original containers in an isolated approved flammable materials storage area. ‣ Keep containers securely sealed as supplied. ‣ **WARNING:** Gradual decomposition during storage in sealed containers may lead to a large pressure build-up and subsequent explosion. ‣ No smoking, naked lights, heat or ignition sources. **FOR MINOR QUANTITIES**: Ensure that: ‣ packages are not opened in storage area, ‣ the goods are kept at least 3 metres from sources of heat as well as all other dangerous goods and all other materials which might react with this material might react to cause a fire, a chemical reaction or explosion, ‣ materials for absorbing and neutralising spills are kept near the storage; ‣ procedures are displayed at the storage describing actions to be taken in the event of a spill or fire. ‣ adequate numbers and types of portable fire extinguisher are provided in or near the storage area. **FOR PACKAGE STORAGE**: ‣ If the material is stored in an indoor fireproof cabinet, the cabinet must be vented to outside the building containing the cabinet. ‣ Packages must be protected from exposure to weather unless the packages are: (i) sole packages of more than 20 l capacity (ii) of metallic or plastic construction (iii) securely closed and are not to be opened in the storage area (iv) stored in such a manner that rain water, contaminated with the material, is collected and disposed of safely.

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	‣ All packaging for Class 1 Goods shall be in accordance with the requirements of the relevant Code for the transport of Dangerous Goods. ‣ Class 1 is unique in that the type of packaging used frequently has a very decisive effect on the hazard and therefore on the assignment to a particular division Packaging for explosive substances shall meet the test requirements for Packaging Group II. ‣ Metal packagings meeting the test criteria of Packing Group I, must **NOT** be used; this avoids unnecessary confinement. ‣ Packagings for organic peroxides must be constructed so that none of the materials, which are in contact with the contents, will catalyse or otherwise dangerously affect the properties of their contents. ‣ For combination packages, cushioning materials must not be readily combustible and must **NOT** cause decomposition of the organic peroxide if leakage occurs. ‣ Generally only stainless steel 316, polyethylene or glass lined equipment is suitable for use when working with organic peroxides. ‣ Some plastics may be incompatible with this material, check with manufacturer for storage suitability. ‣ **DO NOT** repack. Use containers supplied by manufacturer only. ‣ Check that containers are clearly labelled ‣ Type D Liquid Organic Peroxides, UN 3105, UN 3115 are to be packed to the requirements of Packing method OP7A of the ADG Code, with maximum mass of 50 kg. or 60 l. volume. ‣ Plastic drum / container or plastic inner receptacle in fibre-board, or metal outer container. Hydrogen peroxide containing/ generating materials requiring rigid packaging. Store in: ‣ containers with vented lids. ‣ properly passivated aluminium containers. ‣ properly passivated stainless steel.
Storage incompatibility	Hydrogen peroxide ‣ is a powerful oxidiser ‣ contamination or heat may cause self accelerating exothermic decomposition with oxygen gas and steam release - this may generate dangerous pressures - steam explosion. ‣ reacts dangerously with rust, dust, dirt, iron, copper, acids, metals and salts, organic material. ‣ is unstable if heated. (e.g): one volume of 70% hydrogen peroxide solution decomposes to produce 300 volumes of oxygen gas. Methyl ethyl ketone peroxide (MEKP) ‣ is a strong oxidisers ‣ when pure is a shock-sensitive explosive ‣ reacts violently with aldehydes, amines, strong acids, strong bases, reducing agents, combustible substances, hydrogen peroxide, organic materials, oxides of heavy metals, perchloric acid ‣ may generate electrostatic charges ‣ As a class, organic peroxides are amongst the most hazardous materials commonly used in the workplace or laboratory. Several are highly flammable and extremely sensitive to shock, heat, spark, friction, impact and light and readily react with strong oxidising and reducing agents. ‣ Organic compounds, especially finely divided materials, can ignite on contact with concentrated peroxides. ‣ Strongly reduced material such as sulfides, nitrides, and hydrides may react explosively with peroxides.

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	44perorg ▸ Incidents involving interaction of active oxidants and reducing agents, either by design or accident, are usually very energetic and examples of so-called redox reactions. ▸ Organic peroxides as a class are highly reactive. ▸ They are thermally unstable and prone to undergoing exothermic self-accelerating decomposition. ▸ Organic peroxides may decompose explosively, burn rapidly, be impact and/or friction sensitive and react dangerously with many other substances. ▸ Amines and polyester accelerators (cobalt salts, for example) if mixed with organic peroxides / organic peroxide mixtures will cause rapid / spontaneous decomposition with fire / explosion hazard. ▸ Avoid any contamination. ▸ Avoid finely divided combustible materials ▸ Avoid all external heat. ▸ Avoid mixing or reaction with acids, alkalies, reducing agents, metal powders, metal oxides, transition metals and their compounds. ▸ Peroxides decompose over time and give off oxygen. ▸ Peroxides require controlled storage for stability. ▸ **DANGER**: Explosion hazard, never mix peroxides with accelerators or promoters. ▸ Explosion hazard may follow contact with incompatible materials ▸ Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous
Hazard categories in accordance with Regulation (EC) No 1272/2008	Not Available
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	Not Available

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
methyl ethyl ketone peroxide	Dermal 3 mg/kg bw/day (Systemic, Chronic) Inhalation 5.288 mg/m³ (Systemic, Chronic) Inhalation 15.864 mg/m³ (Systemic, Acute) *Dermal 1.5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 1.125 mg/m³ (Systemic, Chronic) ** *Oral 0.75 mg/kg bw/day (Systemic, Chronic) **	0.006 mg/L (Water (Fresh)) 0.001 mg/L (Water - Intermittent release) 0.056 mg/L (Water (Marine)) 0.088 mg/kg sediment dw (Sediment (Fresh Water)) 0.009 mg/kg sediment dw (Sediment (Marine)) 0.014 mg/kg soil dw (Soil) 1.2 mg/L (STP)
hydrogen peroxide	Inhalation 0.04 mg/m³ (Local, Chronic) Inhalation 3 mg/m³ (Local, Acute) *Inhalation 0.21 mg/m³ (Local, Chronic) ** *Inhalation 1.93 mg/m³ (Local, Acute) **	0.013 mg/L (Water (Fresh)) 0.013 mg/L (Water - Intermittent release) 0.014 mg/L (Water (Marine)) 0.047 mg/kg sediment dw (Sediment (Fresh Water)) 0.047 mg/kg sediment dw (Sediment (Marine)) 0.002 mg/kg soil dw (Soil) 4.66 mg/L (STP)
hexylene glycol	Dermal 1.25 mg/kg bw/day (Systemic, Chronic) Inhalation 8.82 mg/m³ (Systemic, Chronic) Inhalation 49 mg/m³ (Local, Chronic) Inhalation 98 mg/m³ (Local, Acute) *Dermal 15 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 7.8 mg/m³ (Systemic, Chronic) ** *Oral 1.5 mg/kg bw/day (Systemic, Chronic) ** *Inhalation 25 mg/m³ (Local, Chronic) ** *Inhalation 49 mg/m³ (Local, Acute) **	0.429 mg/L (Water (Fresh)) 0.043 mg/L (Water - Intermittent release) 4.29 mg/L (Water (Marine)) 1.59 mg/kg sediment dw (Sediment (Fresh Water)) 0.159 mg/kg sediment dw (Sediment (Marine)) 0.066 mg/kg soil dw (Soil) 20 mg/L (STP)

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes

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Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs)	methyl ethyl ketone peroxide	Methyl ethyl ketone peroxides (MEKP)	Not Available	1.5 mg/m3 / 0.2 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	hydrogen peroxide	Hydrogen peroxide	1 ppm / 1.4 mg/m3	2.8 mg/m3 / 2 ppm	Not Available	Not Available
UK Workplace Exposure Limits (WELs)	hexylene glycol	2-Methylpentane-2,4-diol	25 ppm / 123 mg/m3	123 mg/m3 / 25 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
methyl ethyl ketone peroxide	1.8 ppm	20 ppm	22 ppm
hydrogen peroxide	Not Available	Not Available	Not Available
hexylene glycol	2.3 ppm	25 ppm	150 ppm

Ingredient	Original IDLH	Revised IDLH
methyl ethyl ketone peroxide	Not Available	Not Available
hydrogen peroxide	75 ppm	Not Available
hexylene glycol	Not Available	Not Available

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Engineering controls for explosive substances are designed to reduce or eliminate fragmentation and/or blast effects either by suppression of the source of detonation or by protection at the exposed location, or both. Barricades, shields, contained detonation chambers, and “zero quantity-distance (Q-D)” magazines are examples of engineering controls. Engineering controls are designed and tested in a rigorous fashion. The construction of the engineering control must be carefully duplicated in field applications to assure it will function properly.
8.2.2. Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ‣ Full face shield may be required for supplementary but never for primary protection of eyes. ‣ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
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 · Non-sparking or conductive footwear essential. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. ‣ **DO NOT** wear cotton or cotton-backed gloves. ‣ **DO NOT** wear leather gloves. ‣ Promptly hose all spills off leather shoes or boots or ensure that such footwear is protected with PVC over-shoes. ‣ Where hydrogen peroxide exposure may occur do NOT wear PVA gloves. ‣ DO NOT use leather or cotton gloves, leather shoes as spill may cause fire. ‣ Care: Effects may be delayed. ‣ Hand cream offers no protection for hydrogen peroxide and should not be used.
Body protection	See Other protection below
Other protection	For handling explosives or explosive compositions: ‣ Wear close-fitting flame-protection treated clothing closed at the neck and sleeves. ‣ Cotton underwear, socks and conductive shoes are recommended to avoid human static discharge. Manufacture may require: ‣ Non-static flame retardant treated clothing ‣ Access to deluge Safety shower ‣ Barrier cream.

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	‣ Overalls. ‣ PVC Apron. ‣ PVC protective suit may be required if exposure severe. ‣ Eyewash unit. ‣ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ‣ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ‣ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot an shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds.

Respiratory protection

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

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Colourless

Physical state	Liquid	**Relative density (Water = 1)**	1.1
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 (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	15mPas @ 25°C
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	>80	**Taste**	Not Available
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Combustible.	**Oxidising properties**	SADT >60°C
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	Partly miscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available
Nanoform Solubility	Not Available	**Nanoform Particle Characteristics**	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 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 under normal handling conditions. ‣ Prolonged exposure to heat. ‣ Hazardous polymerisation will not occur. NOTE: ‣ A range of exothermic decomposition energies for peroxides is given as 200-340 kJ/mol. ‣ The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is

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	suggested that values of energy releases per unit of mass, rather than on a molar mass basis (J/g) be used in the assessment. For example, in open vessel processes (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in closed vessel processes (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g. BRETHERICK: Handbook of Reactive Chemical Hazards, 4th Edition ▸ Presence of shock and friction ▸ Presence of heat source and ignition source Solutions of hydrogen peroxide slowly decompose, releasing oxygen, and so are often stabilised by the addition of acetanilide, etc.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

11.1. Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Animal testing showed that exposure to methyl ethyl ketone peroxide (MEKP) vapour caused lung congestion with purple spots. The inhalation of organic peroxide dusts or vapours can produce throat and lung irritation and cause an asthma-like effect. Over-exposure can cause tears, salivation, lethargy, slow breathing, breathing difficulties, headache, weakness, tremor, stupor and swelling of the lung. Inhalation hazard is increased at higher temperatures. Inhaling excessive levels of mist may result in headache, dizziness, vomiting, diarrhoea, irritability, sleeplessness and fluid in the lungs, and cause extreme irritation of the nose and chest, cough, discomfort, shortness of breath and inflammation of the nose and throat. Whole-body effects of hydrogen peroxide poisoning include tremor, numbness of the limbs, convulsions, coma and shock. Hydrogen peroxide has poor warning properties.
Ingestion	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum. Ingestion of organic peroxides may produce nausea, vomiting, abnormal pain, stupor, bluish discoloration of skin and mucous membranes. Inflammation of the heart muscle may also occur. Individuals surviving ingestion of up to 60 grams of 60% methyl ethyl ketone peroxide (MEKP) solution experienced severe inflammation of the oesophagus and stomach. Chemical burns of the gastrointestinal tract and scarring and narrowing of the oesophagus were reported in the case of a patient who survived swallowing 60 grams of a 2% solution. Hydrogen peroxide may cause blistering and bleeding from the throat and stomach. When swallowed, it may release large quantities of oxygen which could hyper-distend the stomach and gut and may cause internal bleeding, mouth and throat burns and rupture of the gut. There may also be fever, nausea, foaming at the mouth, vomiting, chest and stomach pain, loss of consciousness, and movement disorders and death. Large amounts can also cause cessation of breath, dizziness, headache, tremors weakness or numbness in the extremities and convulsions.
Skin Contact	All organic peroxides are irritating to the skin and if allowed to remain on the skin, may produce inflammation; some are allergenic. Direct contact with methyl ethyl ketone peroxide (MEKP) may cause irritation, blisters and pain. Repeated application may cause moderate to severe inflammation. In rabbits, concentrations of 1.5% or less did not cause irritation. Skin contact will result in rapid drying, bleaching, leading to chemical burns on prolonged contact Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Hydrogen peroxide is used topically as dental gel and to clean minor wounds. It may cause dose dependent effect on the skin including bleaching, blistering, reddening and corrosion (at >50% concentration). This material can cause inflammation of the skin on contact in some persons.
Eye	This material can cause eye irritation and damage in some persons. Direct contact with methyl ethyl ketone peroxide (MEKP) may cause irritation, redness, pain and blurred vision. In animals, a 40% solution of MEKP causes severe eye damage. At a concentration of 0.6% or less, irritation does not occur. Washing the eyes within four seconds of application prevented permanent eye damage. Eye contact with organic peroxides can cause clouding, redness, swelling and burns of the eye on prolonged contact. Hydrogen peroxide concentrations above 10% are corrosive to the eye and may cause corneal ulceration even days after exposure.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Methyl ethyl ketone peroxide (MEKP) exhibits tumour promoting properties when applied topically to the skin of hairless mutant mice that had previously been initiated with ultraviolet light. Mice given total doses of approximately 7 mg MEKP developed

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	malignant tumours after 15 months. Chronic exposure by rats repeatedly dosed with MEKP 3 times/weekly for 7 weeks by the intraperitoneal or oral route (13 mg/kg and 97 mg/kg respectively) produced marked evidence of cumulative toxicity. The liver showed occasional damage, consisting of fatty degeneration in the central portion of the lobule and an increased number of round cells in the portal spaces; the proximal tubules of the kidney showed desquamation of the epithelium whilst the convoluted tubules showed granular precipitates or castes in the lumina. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Persistent exposure over a long period of time to peroxides produces allergic skin reactions (redness and scaling of the skin) and asthmatic wheezing. Hydrogen peroxide as a human food additive is generally regarded as safe, when used with certain limitations. In experimental animals hydrogen peroxide given by mouth causes damage to the teeth, liver, kidney, stomach and bowel. Inhalation exposure to hydrogen peroxide caused skin irritation, sneezing and death in animals. Skin irritation, sneezing, excessive secretion of tears, and whitening of the hair was also seen in animals chronically exposed to hydrogen peroxide.

Restec Liquid Catalyst	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
methyl ethyl ketone peroxide	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 4000 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
	Inhalation(Mouse) LC50; 2.5 mg/L4h[2]	Eyes (rabbit) 3 mg Irritant
	Oral (Mouse) LD50; 250 mg/kg[2]	Skin (rabbit) 500mg Irritant
		Skin: adverse effect observed (corrosive)[1]
hydrogen peroxide	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: >2000 mg/kg[1]	Not Available
	Inhalation(Mouse) LC50; 2800 mg/L4h[2]	
	Oral (Rat) LD50: >225 mg/kg[2]	
hexylene glycol	**TOXICITY**	**IRRITATION**
	Dermal (rabbit) LD50: 8560 mg/kg[2]	Eye (rabbit): 93mg - SEVERE
	Oral (Rat) LD50: 3700 mg/kg[2]	Eye: no adverse effect observed (not irritating)[1]
		Skin (rabbit):465 mg open-mild
		Skin (rabbit):465mg/24hr-moderate
		Skin: no adverse effect observed (not 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*	

METHYL ETHYL KETONE PEROXIDE	structure/ function of the oesophagus, nausea, vomiting, gastrointestinal change, lymphoma recorded. Equivocal tumourigen by RTECS criteria. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.
HYDROGEN PEROXIDE	No significant acute toxicological data identified in literature search. Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. Exposure to hydrogen peroxide via the skin or oral route can produce toxic effects. Animal studies have shown evidence of damage to the kidney, gut, thymus and liver. Stomach and intestinal lesions including benign and malignant cancers have been observed in mice. It may produce genetic and developmental defects but no reproductive toxicity was reported in mice. 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.
HEXYLENE GLYCOL	Hexylene glycol is of low acute toxicity but may be acutely lethal at very high doses. It may cause reversible irritation of the skin and eye. Repeated exposure may cause irreversible damage to the liver and stomach and partly reversible kidney damage. It is likely not to cause mutations or affect reproduction or development of the unborn.

Continued...

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 Information on other hazards

11.2.1. Endocrine disrupting properties

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

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

Restec Liquid Catalyst

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

methyl ethyl ketone peroxide

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	44.2mg/l	2
EC50	72h	Algae or other aquatic plants	3.2mg/l	2
EC50	48h	Crustacea	39mg/l	2
EC10(ECx)	72h	Algae or other aquatic plants	1.7mg/l	2

hydrogen peroxide

Endpoint	Test Duration (hr)	Species	Value	Source
NOEC(ECx)	72h	Algae or other aquatic plants	0.1mg/l	1
EC50	96h	Algae or other aquatic plants	2.27mg/l	4
EC50	72h	Algae or other aquatic plants	0.69mg/l	4
LC50	96h	Fish	16.4mg/l	2
EC50	48h	Crustacea	2mg/l	2

hexylene glycol

Endpoint	Test Duration (hr)	Species	Value	Source
LC50	96h	Fish	>100mg/l	4
EC50	72h	Algae or other aquatic plants	>429mg/l	2
EC50	48h	Crustacea	2400-3200mg/l	4
NOEC(ECx)	72h	Algae or other aquatic plants	429mg/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*

Methyl ethyl ketone (MEKP):
Environmental fate:
Readily biodegradable is a closed bottle system
Ecotoxicity:
Fish LC50 (96 h): guppy 44.2 mg/l
Alga EC50 (96 h): 4.27 mg/l
Activated sludge EC50: 16 mg/l
For hydrogen peroxide:log Kow: -1.36:
Environmental Fate: Hydrogen peroxide is a naturally occurring substance (typical background concentrations < 1 - 30 g/l), which is produced by almost all cells in their metabolism, with the exception of anaerobic bacteria. Hydrogen peroxide is a reactive substance in the presence of other substances, elements, radiation, materials and can be degraded by micro-organisms or higher organisms. Air - Hydrogen peroxide is degraded by light and thus may be removed from the atmosphere by photolysis giving rise to hydroxyl radicals, by reaction with hydroxyl radicals, or by heterogenous loss processes such as rain-out. Significantly

Continued...

higher hydrogen peroxide concentrations are found in polluted atmospheres as compared with clean air, presumably due to oxidation of reactive hydrocarbons as a result of exposure to light.
DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
methyl ethyl ketone peroxide	LOW (Half-life = 56 days)	LOW (Half-life = 0.38 days)
hydrogen peroxide	LOW	LOW
hexylene glycol	LOW	LOW

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
methyl ethyl ketone peroxide	LOW (LogKOW = -0.5762)
hydrogen peroxide	LOW (LogKOW = -1.571)
hexylene glycol	LOW (LogKOW = 0.5802)

12.4. Mobility in soil

Ingredient	Mobility
methyl ethyl ketone peroxide	LOW (KOC = 10.58)
hydrogen peroxide	LOW (KOC = 14.3)
hexylene glycol	HIGH (KOC = 1)

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 disrupting properties

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

12.7. Other adverse effects

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

SECTION 13 Disposal considerations

13.1. Waste treatment methods

Product / Packaging disposal	▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Explosives which are surplus, deteriorated or considered unsafe for transport, storage or use shall be destroyed and the statutory authorities shall be notified. ▸ Explosives must not be thrown away, buried, discarded or placed with garbage. ▸ This material may be disposed of by burning or detonation but the operation must be performed under the control of a person competent in the destruction of explosives. Disposal by detonation: ▸ The explosives to be destroyed must be placed in direct contact with fresh priming charge in a hole which is at least 0.6 metre deep and then adequately stemmed. For small quantities of oxidising agent: ▸ Cautiously acidify a 3% solution to pH 2 with sulfuric acid. ▸ Gradually add a 50% excess of sodium bisulfite solution with stirring. ▸ Add a further 10% sodium bisulfite. ▸ If no further reaction occurs (as indicated by a rise in temperature) cautiously add more acid.

Continued...

Waste treatment options	Not Available
Sewage disposal options	Not Available

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	2WE

Land transport (ADR-RID)

14.1. **UN number or ID number**	3105
14.2. **UN proper shipping name**	ORGANIC PEROXIDE TYPE D, LIQUID (contains methyl ethyl ketone peroxide)
14.3. **Transport hazard class(es)**	Class: 5.2 Subsidiary risk: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Hazard identification (Kemler): Not Applicable Classification code: P1 Hazard Label: 5.2 Special provisions: 122 274 Limited quantity: 125 ml Tunnel Restriction Code: 2 (D)

Air transport (ICAO-IATA / DGR)

14.1. **UN number**	3105
14.2. **UN proper shipping name**	Organic peroxide type D, liquid * (contains methyl ethyl ketone peroxide)
14.3. **Transport hazard class(es)**	ICAO/IATA Class: 5.2 ICAO / IATA Subrisk: Not Applicable ERG Code: 5L
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Special provisions: A20 A150 A802 Cargo Only Packing Instructions: 570 Cargo Only Maximum Qty / Pack: 10 L Passenger and Cargo Packing Instructions: 570 Passenger and Cargo Maximum Qty / Pack: 5 L Passenger and Cargo Limited Quantity Packing Instructions: Forbidden Passenger and Cargo Limited Maximum Qty / Pack: Forbidden

Sea transport (IMDG-Code / GGVSee)

14.1. **UN number**	3105

Continued...

14.2. **UN proper shipping name**	ORGANIC PEROXIDE TYPE D, LIQUID (contains methyl ethyl ketone peroxide)
14.3. **Transport hazard class(es)**	IMDG Class: 5.2 IMDG Subrisk: Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	EMS Number: F-J, S-R Special provisions: 122 274 Limited Quantities: 125 mL

Inland waterways transport (ADN)

14.1. **UN number**	3105
14.2. **UN proper shipping name**	ORGANIC PEROXIDE TYPE D, LIQUID (contains methyl ethyl ketone peroxide)
14.3. **Transport hazard class(es)**	5.2 Not Applicable
14.4. **Packing group**	Not Applicable
14.5. **Environmental hazard**	Not Applicable
14.6. **Special precautions for user**	Classification code: P1 Special provisions: 122; 274 Limited quantity: 125 ml Equipment required: PP, EX, A Fire cones number: 0

14.7. Maritime transport in bulk according to IMO instruments

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

Not Applicable

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

Product name	Group
methyl ethyl ketone peroxide	Not Available
hydrogen peroxide	Not Available
hexylene glycol	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
methyl ethyl ketone peroxide	Not Available
hydrogen peroxide	Not Available
hexylene glycol	Not Available

SECTION 15 Regulatory information

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

methyl ethyl ketone peroxide is found on the following regulatory lists

Europe EC Inventory

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

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

hydrogen peroxide is found on the following regulatory lists

Continued...

Europe EC Inventory	European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)	International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

hexylene glycol is found on the following regulatory lists

Europe EC Inventory	European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)	

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

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

Seveso Category	Not Available

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
methyl ethyl ketone peroxide	1338-23-4	617-021-00-1	01-2119514691-43

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Org. Perox. D; Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1	GHS02; GHS05; Dgr	H242; H302; H314
2	Acute Tox. 4; Skin Corr. 1B; Eye Dam. 1; Org. Perox. B; Expl. 1.3; Acute Tox. 2	GHS05; Dgr; GHS01; GHS06	H302; H314; H318; H241; H203; H330

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

Ingredient	CAS number	Index No	ECHA Dossier
hydrogen peroxide	7722-84-1	008-003-00-9	01-2119485845-22

Harmonisation (C&L Inventory)	Hazard Class and Category Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
1	Ox. Liq. 1; Acute Tox. 4; Skin Corr. 1A; Acute Tox. 4	GHS03; GHS05; Dgr	H271; H302; H314; H332
2	Ox. Liq. 1; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; Flam. Liq. 2; Acute Tox. 4; Met. Corr. 1; Aquatic Chronic 2; Acute Tox. 3; Acute Tox. 2	GHS03; GHS05; Dgr; GHS02; GHS09; GHS06	H271; H314; H335; H318; H225; H290; H411; H301; H330

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

Ingredient	CAS number	Index No	ECHA Dossier
hexylene glycol	107-41-5	603-053-00-3	01-2119539582-35

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	GHS07; Wng	H315; H319
2	Skin Irrit. 2; Eye Irrit. 2; Repr. 2; Acute Tox. 4; Acute Tox. 4; Aquatic Chronic 3; STOT RE 2	GHS08; Wng; GHS05	H315; H319; H361d; H302; H312; H304; H332; H336; H411; H373
1	Skin Irrit. 2; Eye Irrit. 2	GHS07; Wng	H315; H319
2	Skin Irrit. 2; Eye Irrit. 2	GHS07; Wng	H315; H319

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

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (methyl ethyl ketone peroxide; hydrogen peroxide; hexylene glycol)

Continued...

National Inventory	Status
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	10/04/2023
Initial Date	03/11/2022

Full text Risk and Hazard codes

H203	Explosive; fire, blast or projection hazard.
H225	Highly flammable liquid and vapour.
H241	Heating may cause a fire or explosion.
H271	May cause fire or explosion; strong oxidiser.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

SDS Version Summary

Version	Date of Update	Sections Updated
3.6	10/04/2023	Composition / information on ingredients - Ingredients

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. Scale of use, frequency of use and current or available engineering controls must be considered.

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

Continued...

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
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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

Classification according to regulation (EC) No 1272/2008 [CLP] and amendments	Classification Procedure
Organic Peroxides Type D, H242	On basis of test data
Skin Corrosion/Irritation Category 1C, H314	Expert judgement
Serious Eye Damage/Eye Irritation Category 1, H318	Expert judgement
Acute Toxicity (Inhalation) Category 4, H332	Expert judgement
Acute Toxicity (Oral) Category 4, H302	Expert judgement
, EUH208	Calculation method

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