

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

1.1 Product identifier

Trade name/designation: Caltech FCP Catalyst.

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

Relevant identified uses: Catalyst for use with liquid applied roof waterproofing systems.

Recommended restrictions: SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen).
SU3 Industrial uses: Uses of substances as such or in preparations* at industrial sites.

1.3 Supplier details

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

1.4 Emergency telephone number

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

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]:

H242 - Organic Peroxides Type D, H319 - Serious Eye Damage/Eye Irritation Category 2, H360D - Reproductive Toxicity Category 1B, H317 - Sensitisation (Skin) Category 1, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1.

2.2 Label elements

Hazard pictures:



Signal word:

Danger.

Hazard statements:

H242: Heating may cause a fire.
H319: Causes serious eye irritation.
H360D: May damage the unborn child.
H317: May cause an allergic skin reaction.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements prevention:

P201: Obtain special instructions before use.
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.

Precautionary statements response:

P308+P313 IF exposed or concerned: Get medical advice/ attention.
P370+P378 In case of fire: Use water jets to extinguish.
P302+P352 IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

2.3 Other hazards

Dicyclohexyl Phthalate: Listed in the European Chemicals Agency (ECHA) Candidate List of Substances of Very High Concern for Authorisation.
Dicyclohexyl Phthalate: Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply).
Dicyclohexyl Phthalate: Listed in the Europe Regulation (EU) 2018/1881 Specific Requirements for Endocrine Disruptors.

3. COMPOSITION AND INFORMATION ABOUT THE COMPONENTS

3.1 Substances

See 'Composition on ingredients' in Section 3.2.

3.2 Mixtures

Ingredient	Numbers	Classification (EC) 1272/2008	SCL / M-Factor	Nanoform Particle Characteristics	Concentration
Dibenzoyl Peroxide	CAS No: 94-36-0 EC-No: 202-327-6 Index-No: 617-008-00-0 REACH No: 01-2119511472-50	Organic Peroxides Type B, Serious Eye Damage/Eye Irritation Category 2, Sensitisation (Skin) Category 1; H241, H319, H317 [2]	Not available	Not available	49-51 % by weight
Dicyclohexyl Phthalate [E]	CAS No: 84-61-7 EC-No: 201-545-9 Index-No: 607-719-00-4 REACH No: 01-2119978223-34-0001	Sensitisation (Skin) Category 1, Reproductive Toxicity Category 1B; H317, H360D [2]	Not available	Not available	40-50 % by weight

Legend: 1. Classified by Chemwatch; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties.

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye contact: If this product comes in contact with the eyes:
Immediately hold 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, aerosols or combustion products are inhaled remove from contaminated area.
Other measures are usually unnecessary.

Ingestion: Immediately give a glass of water.
First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11.

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

Treat symptomatically.

Toxic myocarditis may follow ingestion of oxidizing agents such as peroxides.

Basic treatment:

Establish a patent airway with suction where necessary.

Watch for signs of respiratory insufficiency and assist ventilation as necessary.

Administer oxygen by non-rebreather mask at 10 to 15 l/min.

Monitor and treat, where necessary, for pulmonary oedema .

Monitor and treat, where necessary, for shock.

Anticipate seizures.

DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

DO NOT attempt neutralisation as exothermic reaction may occur.

Skin burns should be covered with dry, sterile bandages, following decontamination.

Advanced treatment:

Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.

Positive-pressure ventilation using a bag-valve mask might be of use.

Monitor and treat, where necessary, for arrhythmias.

Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.

Drug therapy should be considered for pulmonary oedema.

Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.

Treat seizures with diazepam.

Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

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 substance 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 fire-fighters

Fire-fighting:

Alert Fire Brigade and tell them location and nature of hazard.

May be violently or explosively reactive.

Wear full body protective clothing with breathing apparatus.

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.

Combustion products include:

- Carbon monoxide (CO)
- Carbon dioxide (CO₂)

Other pyrolysis products typical of burning organic material.

Benzoyl peroxide decomposes when heated with formation of dense white toxic smoke of benzoic acid, phenyl benzoate, terphenyls, biphenyls, and carbon dioxide.

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.

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:

Clean up all spills immediately.

No smoking, naked lights, ignition sources.

Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.

Avoid breathing dust or vapours and all contact with skin and eyes.

Major spills:

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

May be violently or explosively reactive.

Wear breathing apparatus plus protective gloves.

6.4 Reference to other sections

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

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Safe handling:

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:

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 Solid Organic Peroxides, UN 3106, UN 3116 are to be packed to the requirements of Packing method OP7B of the ADG Code, with maximum mass of 50 kg.

Steel, Aluminium, Plastic drum / container or plastic inner receptacle in fibre-board or metal outer container.

Storage incompatibility:

For Benzoyl Peroxide:

Avoid reaction with acids, alkalis, oxidising and reducing agents, metals and metal oxides, and combustible materials.

Amines and solutions of cobalt salts used as promoters and accelerators in polyester compounds if mixed with benzoyl peroxide will cause spontaneous decomposition (detonation).

Alkalis cause rapid decomposition of benzoyl peroxide with generation of large volumes of carbon dioxide gas (CO₂) and may pressurise containers.

Avoid contact with copper, brass, lead and zinc.

Phthalates:

React with strong acids, strong oxidisers, permanganates and nitrates
attack some form of plastics

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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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.

Avoid storage with reducing agents.

Peroxides decompose over time and give off oxygen.

Peroxides require controlled storage for stability.

DANGER: Explosion hazard, never mix peroxides with accelerators or promoters.

Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.

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

7.3 Specific end use(s)

See Section 1.2.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
Dibenzoyl Peroxide	Dermal 13.3 mg/kg bw/day (Systemic, Chronic) Inhalation 39 mg/m ³ (Systemic, Chronic) Dermal 34 µg/cm ² (Local, Chronic) Oral 2 mg/kg bw/day (Systemic, Chronic) *	0.02 µg/L (Water (Fresh)) 0.002 µg/L (Water - Intermittent release) 0.602 µg/L (Water (Marine)) 0.013 mg/kg sediment dw (Sediment (Fresh Water)) 0.001 mg/kg sediment dw (Sediment (Marine)) 0.003 mg/kg soil dw (Soil) 0.35 mg/L (STP)
Dicyclohexyl Phthalate	Dermal 0.5 mg/kg bw/day (Systemic, Chronic) Inhalation 35.2 mg/m ³ (Systemic, Chronic) Inhalation 35.2 mg/m ³ (Systemic, Acute) Dermal 0.25 mg/kg bw/day (Systemic, Chronic) * Inhalation 0.87 mg/m ³ (Systemic, Chronic) * Oral 0.25 mg/kg bw/day (Systemic, Chronic) * Oral 0.25 mg/kg bw/day (Systemic, Acute) *	0.004 mg/L (Water (Fresh)) 0 mg/L (Water - Intermittent release) 0.036 mg/L (Water (Marine)) 1.06 mg/kg sediment dw (Sediment (Fresh Water)) 0.106 mg/kg sediment dw (Sediment (Marine)) 0.21 mg/kg soil dw (Soil) 10 mg/L (STP) 133 g/kg food (Oral)

* Values for General Population

Occupational Exposure Limits (OEL)

Ingredient data:

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	Dibenzoyl Peroxide	Dibenzoyl peroxide	5 mg/m ³	Not available	Not available	Not available
UK Workplace Exposure Limits (WELs).	Dicyclohexyl Phthalate	Dicyclohexyl phthalate	5 mg/m ³	Not available	Not available	Not available


Emergency limits:

Ingredient	TEEL-1	TEEL-2	TEEL-3
Dibenzoyl Peroxide	15 mg/m ³	1,200 mg/m ³	7,000 mg/m ³

Ingredient	Original IDLH	Revised IDLH
Dibenzoyl Peroxide	1,500 mg/m ³	Not available
Dicyclohexyl Phthalate	Not available	Not available

8.2 Exposure controls

8.2.1. Appropriate engineering Controls:	<p>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.</p> <p>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.</p>
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8.2.2. Personal protection:	
Eye and face protection:	<p>Chemical goggles. 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.</p>
Skin protection:	See Hand protection below.
Hands/feet protection:	<p>Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber NOTE: 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. Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. 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.</p>
Body protection:	See Other protection below.
Other protection:	<p>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 and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds.</p>
Respiratory protection:	<p>Type -P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)</p> <ul style="list-style-type: none"> · Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures. · The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option). · Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended. · Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program. · Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU) · Use approved positive flow mask if significant quantities of dust becomes airborne. · Try to avoid creating dust conditions. <p>Class P2 particulate filters are used for protection against mechanically and thermally generated particulates or both. P2 is a respiratory filter rating under various international standards, Filters at least 94% of airborne particles Suitable for:</p>

	<ul style="list-style-type: none"> · Relatively small particles generated by mechanical processes eg. grinding, cutting, sanding, drilling, sawing. · Sub-micron thermally generated particles e.g. welding fumes, fertilizer and bushfire smoke. · Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS
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8.2.3 Environmental exposure controls

See section 12

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Important health, safety and environmental information

Appearance: The phthalates have a clear syrupy liquid consistency and show low water solubility, high oil solubility, and low volatility. The polar carboxyl group contributes little to the physical properties of the phthalates, except when R and R' are very small (such as ethyl or methyl groups). Phthalates are colourless, odourless liquids produced by reacting phthalic anhydride with an appropriate alcohol (usually 6- to 13-carbon). Phthalate esters are the dialkyl or alkyl aryl esters of phthalic acid (also called 1,2-benzenedicarboxylic acid). When added to plastics, phthalates allow the long polyvinyl molecules to slide against one another.
White

Physical state:	Solid	Relative density (Water = 1):	1.23
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):	Not available
Initial boiling point and boiling range (°C):	Not available	Molecular weight (g/mol):	Not available
Flash point (°C):	Not available	Taste:	Not available
Evaporation rate [kg/(s m²)]:	Not available	Explosive properties:	Not available
Flammability:	Not available	Oxidising properties:	SADT 55
Upper Explosive Limit (%):	Not available	Surface Tension (dyn/cm or mN/m):	Not available
Lower Explosive Limit (%):	Not available	Volatile Component (%vol):	Not available
Vapour pressure (kPa):	Not available	Gas group:	Not available
Solubility in water:	Immiscible	pH as a solution (1%):	Not available
Vapour density (Air = 1):	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.

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 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. BREITHERICK: Handbook of Reactive Chemical Hazards, 4th Edition.

10.3 Possibility of hazardous reactions

See Section 7.2.

10.4 Conditions to avoid

See Section 7.2.

10.5 Incompatible materials

See Section 7.2.

10.6. Hazardous decomposition products

See Section 5.3.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Inhaled:	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. The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Ingestion:	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. The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The toxicity of phthalates is not excessive due to slow oral absorption and metabolism. Absorption is affected by fat in the diet. Repeated doses can cause cumulative toxic effects, and symptoms include an enlarged liver which often reverses if exposure is maintained. Carbohydrate metabolism is disrupted, and cholesterol and triglyceride levels in the blood falls.
Skin Contact:	Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. All organic peroxides are irritating to the skin and if allowed to remain on the skin, may produce inflammation; some are allergenic. 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. There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.

Eye:	<p>Eye contact with organic peroxides can cause clouding, redness, swelling and burns of the eye on prolonged contact.</p> <p>Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals.</p> <p>Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn).</p>
Chronic:	<p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material.</p> <p>Exposure to phthalates over years leads to pain, numbness and spasms in the hands and feet. Many people have developed multiple disorders in the nervous system and the balancing system.</p> <p>Prolonged or repeated skin contact with benzoyl peroxide may result in allergic skin reactions even at diluted concentrations.</p> <p>Ingestion results in abdominal pain, low body oxygen and severe depression. Chronic effects of exposure include allergic reactions characterised by redness, itching, oozing, crusting, and scaling of the skin and asthmatic wheezing. Although it does not exhibit complete carcinogenic or tumour-initiating activity, it has been associated with certain tumours of like papillomas and squamous cell carcinomas.</p> <p>There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.</p> <p>Persistent exposure over a long period of time to peroxides produces allergic skin reactions (redness and scaling of the skin) and asthmatic wheezing.</p>

Caltech FCP Catalyst:

Toxicity	Irritation
Not available	Not available

Dibenzoyl Peroxide:

Toxicity	Irritation
Dermal (mammal) LD50: >1000 mg/kg[2]	Eye (rabbit): 500 mg/24h - mild
Oral (Rat) LD50: 7710 mg/kg[2]	Skin effects (MAK): very weak

Dicyclohexyl Phthalate:

Toxicity	Irritation
Dermal (rat) LD50: >2000 mg/kg[1]	Eye: no adverse effect observed (not irritating)[1]
Oral (Rat) LD50: >2000 mg/kg[1]	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.

Dibenzoyl Peroxide:	<p>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p> <p>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.</p>
Dicyclohexyl Phthalate:	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.</p> <p>DCHP can be considered to have low acute toxicity. It causes minimal irritation of the skin and eye. It may also cause wheezing.</p> <p>Animal testing suggests that repeated exposure may cause increased weight of the liver. Available data indicate that phthalate esters are minimally toxic by swallowing, inhalation and skin contact. Repeated exposure may result in weight gain, liver enlargement and induction of liver enzymes. They may also cause shrinking of the testicles and other structural malformations. They may reduce male and female fertility and number of live births, according to animal testing.</p>

Caltech FCP Catalyst & Dibenzoyl Peroxide & Dicyclohexyl Phthalate:	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.
Caltech FCP Catalyst & Dicyclohexyl Phthalate:	The material may produce peroxisome proliferation. Peroxisomes are single, membrane limited organelles in the cytoplasm that are found in the cells of animals, plants, fungi, and protozoa.
Caltech FCP Catalyst & Dibenzoyl Peroxide:	Benzoyl peroxide may cause double vision, breathing problems, excess saliva and tear formation, redness of the skin and changes in motor activity. It did not produce blood or biochemical adverse effects, gene mutation or evidence of cancer. Repeated oral administration may result in decreased weights of testes and the newborn.

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 Additional information

11.2.1 Endocrine Disruption Properties

Many chemicals may mimic or interfere with the body's hormones, known as the endocrine system. Endocrine disruptors are chemicals that can interfere with endocrine (or hormonal) systems.

Endocrine disruptors interfere with the synthesis, secretion, transport, binding, action, or elimination of natural hormones in the body. Any system in the body controlled by hormones can be derailed by hormone disruptors. Specifically, endocrine disruptors may be associated with the development of learning disabilities, deformations of the body various cancers and sexual development problems.

Endocrine disrupting chemicals cause adverse effects in animals. But limited scientific information exists on potential health problems in humans. Because people are typically exposed to multiple endocrine disruptors at the same time, assessing public health effects is difficult.

11.2.2 Other Information

See Section 11.1.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Caltech FCP Catalyst:

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

Dibenzoyl Peroxide:

End point	Test duration (Hr)	Species	Value	Source
EC10(ECx)	504h	Crustacea	0.001mg/l	2
EC50	72h	Algae or other aquatic plants	0.042mg/l	2
EC50	48h	Crustacea	0.11mg/l	2
LC50	96h	Fish	0.06mg/l	2

Dicyclohexyl Phthalate:

End point	Test duration (Hr)	Species	Value	Source
NOEC(ECx)	504h	Crustacea	0.181mg/l	2
EC50	72h	Algae or other aquatic plants	>2mg/l	2
LC50	96h	Fish	>2mg/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.

Very toxic to aquatic organisms.

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

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

For Benzoyl Peroxide:

Benzoyl peroxide has a melting point of 104 -106 °C, vapor pressure of 0.00929 Pa, solubility of 9.1 mg/L in water at 25 C, and log Pow of 3.43 at 25 C.

Environmental Fate: For indirect photolysis in the atmosphere, the half-life is estimated to be 3 days. The substance is readily biodegradable and hydrolyses rapidly in water. The main hydrolysis product of benzoyl peroxide is benzoic acid.

For Phthalate Esters:

Terrestrial Fate: Phthalate esters have been observed to broken down by a wide range of bacteria. Biodegradation is, therefore, expected to be the dominant fate in surface soils and sediments.

Little information is available on the fate of phthalate esters in soil, even though the primary point of entry, (landfills). The migration of phthalate esters out of plastics is slow.

DO NOT discharge into sewer or waterways.

12.2 Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Dibenzoyl Peroxide	HIGH (Half-life = 14 days)	LOW (Half-life = 21.25 days)
Dicyclohexyl Phthalate	HIGH	HIGH

12.3 Bioaccumulation potential

Ingredient	Bioaccumulation
Dibenzoyl Peroxide	LOW (LogKOW = 3.46)
Dicyclohexyl Phthalate	HIGH (LogKOW = 6.2026)

12.4 Mobility in soil

Ingredient	Mobility
Dibenzoyl Peroxide	LOW (KOC = 771)
Dicyclohexyl Phthalate	LOW (KOC = 17640)

12.5 Results of PBT and vPvB assessment

	P	B	T
Relevant available data	Not available	Not available	Not available
PBT	✗	✗	✗
vPvB	✗	✗	✗
PBT Criteria fulfilled?			No
vPvB			No

12.6 Endocrine Disruption Properties

The evidence linking adverse effects to endocrine disruptors is more compelling in the environment than it is in humans. Endocrine disruptors profoundly alter reproductive physiology of ecosystems and ultimately impact entire populations. Some endocrine-disrupting chemicals are slow to break-down in the environment.

That characteristic makes them potentially hazardous over long periods of time. Some well established adverse effects of endocrine disruptors in various wildlife species include; eggshell-thinning, displayed of characteristics of the opposite sex and impaired reproductive development. Other adverse changes in wildlife species that have been suggested, but not proven include; reproductive abnormalities, immune dysfunction and skeletal deformities.

12.7 Other adverse effects

Not available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / packaging disposal:	Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. 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. 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.
Waste Code:	16 09 03* - peroxides, for example hydrogen peroxide.
Waste treatment options:	Not available.
Sewage disposal options:	Not available.

14. TRANSPORT INFORMATION

Labels required:



Marine Pollutant:

Hazchem: 1WE.

Land transport (ADR):

14.1 UN number	3106
14.2 UN proper shipping name	ORGANIC PEROXIDE TYPE D, SOLID (contains dibenzoyl peroxide)
14.3 Transport hazard class(es)	Class: 5.2 Subrisk: Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazard	Environmentally hazardous
14.6 Special precautions for user	Hazard identification (Kemler): Not applicable Classification code: P1 Hazard label: 5.2 Special provisions: 122 274 Limited quantity: 500 g Tunnel restriction code: 2 (D)

Air transport (ICAO-IATA/DGR):

14.1 UN number	3106
14.2 UN proper shipping name	Organic peroxide type D, solid * (contains dibenzoyl peroxide)
14.3 Transport hazard class(es)	ICAO/IATA class: 5.2 ICAO/IATA subrisk: Not applicable ERG code: 5 L
14.4 Packing group	Not applicable
14.5 Environmental hazard	Environmentally hazardous
14.6 Special precautions for user	Special provisions: A20 A802 Cargo only packing instruction: 570 Cargo only maximum qty/pack: 10 kg Passenger and cargo packing instruction: 570 Passenger and cargo maximum qty/pack: 5 kg Passenger and cargo limited qty packing instructions: Forbidden Passenger and cargo limited maximum qty/pack: Forbidden

Sea transport (IMDG-Code/GGVSee):

14.1 UN number	3106
14.2 UN proper shipping name	ORGANIC PEROXIDE TYPE D, SOLID (contains dibenzoyl 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	Marine Pollutant
14.6 Special precautions for user	EMS number: F-J, S-R Special provisions: 122 274 Limited quantities: 500 g

Inland waterways transport (ADN):

14.1 UN number	3106
14.2 UN proper shipping name	ORGANIC PEROXIDE TYPE D, SOLID (contains dibenzoyl peroxide)
14.3 Transport hazard class(es)	5.2: Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazard	Environmentally hazardous
14.6 Special precautions for user	Classification code: P1 Special provisions: 122; 274 Limited quantity: 500 g Equipment required: PP, EX, A Fire cones numbers: 0

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

Not applicable.

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

Product Name	Group
Dibenzoyl Peroxide	Not available
Dicyclohexyl Phthalate	Not available

14.9 Transport in bulk in accordance with the ICG Code

Product Name	Ship Type
Dibenzoyl Peroxide	Not available
Dicyclohexyl Phthalate	Not available

15. REGULATORY INFORMATION

15.1 Safety, Health And Environmental Regulations/Legislation Specific For The Substance Or Mixture

Dibenzoyl Peroxide is found on the following regulatory lists:

Great Britain GB mandatory classification and labelling list (GB MCL)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

UK REACH grandfathered registrations notified substances list
UK Workplace Exposure Limits (WELs).

Dicyclohexyl Phthalate is found on the following regulatory lists:

Chemical Footprint Project - Chemicals of High Concern List
Great Britain GB mandatory classification and labelling list (GB MCL)
UK REACH Authorisation List (Annex XIV)

UK REACH grandfathered registrations notified substances list
UK Workplace Exposure Limits (WELs).

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

15.2 Chemical safety assessment

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

National inventory status:

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (dibenzoyl peroxide; dicyclohexyl phthalate)
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.

16. OTHER INFORMATION

Full text risk and hazard codes:

H241 Heating may cause a fire or explosion.

SDS version summary:

Version	Date of Update	Section Updated
1.1	14/06/2023	Template Change

Other information:

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

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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

- EN 166 Personal eye-protection
- 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
- AIIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European Inventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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

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