

**VUL-CUP® 40C-SP2****1. PRODUCT AND COMPANY IDENTIFICATION****Company**

Arkema Inc.  
900 First Avenue  
King of Prussia, Pennsylvania 19406

**Functional Additives**

**Customer Service Telephone Number:** (800) 331-7654  
(Monday through Friday, 8:00 AM to 5:00 PM EST)

**Emergency Information**

**Transportation:** CHEMTREC: (800) 424-9300  
(24 hrs., 7 days a week)  
**Medical:** Rocky Mountain Poison Center: (866) 767-5089  
(24 hrs., 7 days a week)

**Product Information**

**Product name:** VUL-CUP® 40C-SP2  
**Synonyms:** Not available  
**Molecular formula:** Complex Mixture  
**Chemical family:** Organic peroxide - dialkyl peroxides  
**Product use:** Cross-linking agent for polymers and elastomers

**2. HAZARDS IDENTIFICATION****Emergency Overview**

**Color:** Whitish.  
**Physical state:** solid  
**Form:** powder  
**Odor:** Slightly irritating

**\*Classification of the substance or mixture:**

Flammable Solids, Category 1, H228  
Organic peroxides, Type G  
Serious eye damage, Category 1, H318  
Chronic aquatic toxicity, Category 4, H413

\*For the full text of the H-Statements mentioned in this Section, see Section 16.

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**GHS-Labeling**

Hazard pictograms:



Signal word:

**Danger****Hazard statements:**

- H228 : Flammable solid.  
H318 : Causes serious eye damage.  
H413 : May cause long lasting harmful effects to aquatic life.

**Supplemental Hazard Statements:**

- May form combustible dust concentrations in air.  
Organic peroxide.  
Hazardous decomposition may occur.

**Precautionary statements:****Prevention:**

- P210 : Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P240 : Ground/bond container and receiving equipment.  
P241 : Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P273 : Avoid release to the environment.  
P280 : Wear protective gloves/ eye protection/ face protection.

**Response:**

- P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 : Immediately call a POISON CENTER/doctor.  
P370 + P378 : In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Disposal:**

- P501 : Dispose of contents/ container to an approved waste disposal plant.

**Supplemental information:****Potential Health Effects:**

- Mechanical irritation effects from dust exposure are possible at ambient temperature.
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**Other:**

Dust and/or vapor are reported to cause irritation when proper industrial hygiene controls/procedures are not used.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Carbonic acid calcium salt (1:1)	471-34-1	< 51 %	Not classified
Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl)]	25155-25-3	>= 39 - < 42 %	H242, H413
Silica gel, pptd., cryst.-free	112926-00-8	< 5 %	Not classified
Anti-oxidizing agent	Proprietary*	< 4 %	H302, H318, H402
Peroxide, 1,1-dimethylethyl 1-methyl-1-[3-(1-methylethenyl)phenyl]ethyl	96319-55-0	< 2 %	H315, H411

\*The specific chemical identity is withheld because it is trade secret information of Arkema Inc.

\*\*For the full text of the H-Statements mentioned in this Section, see Section 16.

**4. FIRST AID MEASURES**

**4.1. Description of necessary first-aid measures:**

**Inhalation:**

If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Skin:**

In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**VUL-CUP® 40C-SP2****Eyes:**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

**Ingestion:**

If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

**4.2. Most important symptoms/effects, acute and delayed:**

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information) and Section 11 (Toxicology Information) of this SDS.

**4.3. Indication of immediate medical attention and special treatment needed, if necessary:**

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

**5. FIREFIGHTING MEASURES****Extinguishing media (suitable):**

Water spray, Foam, Dry chemical, Carbon dioxide (CO<sub>2</sub>)

**Extinguishing media (unsuitable):**

High volume water jet

**Protective equipment:**

Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

**Further firefighting advice:**

Do not use a solid stream of water.

A solid stream of water can cause a dust explosion.

Fight fire with large amounts of water from a safe distance.

Cool closed containers exposed to fire with water spray.

Closed containers of this material may explode when subjected to heat from surrounding fire.

After a fire, wait until the material has cooled to room temperature before initiating clean-up activities.

Fire fighting equipment should be thoroughly decontaminated after use.

Do not allow run-off from fire fighting to enter drains or water courses.

**Fire and explosion hazards:**

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Contact with materials to avoid or exposure to temperatures exceeding the SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may autoignite.

Dust clouds generated during handling and/or storage can form explosive mixtures with air. Dust explosion characteristics vary with the particle size, particle shape, moisture content, contaminants, and other variables.

Note: Check that all equipment is properly grounded and installed to satisfy electrical classification requirements. As with any dry material, pouring this material or allowing it to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come into contact with the material or its container.

When burned, the following hazardous products of combustion can occur:

Carbon oxides

Aromatic derivatives

Hazardous organic compounds

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:**

Prevent further leakage or spillage if you can do so without risk. Evacuate area of all unnecessary personnel. Ventilate the area. Eliminate all ignition sources. Avoid dust formation and dispersal of dust in the air. Wet down (dampen) the spilled material with water. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal. The sweepings should be wetted down further with water. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Implement workplace practices such that dusts are not allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

**Protective equipment:**

Appropriate personal protective equipment is set forth in Section 8.

**VUL-CUP® 40C-SP2****7. HANDLING AND STORAGE****Handling****General information on handling:**

Contact with materials to avoid or exposure to temperatures exceeding the SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may autoignite.

Do not taste or swallow.

Do not get in eyes, on skin, or on clothing.

No smoking.

Avoid breathing dust.

Keep away from heat, sparks and flames.

Keep container tightly closed and away from combustible materials.

Keep only in the original container.

Use only with adequate ventilation.

Prevent product contamination.

Wash thoroughly after handling.

Avoid creating dust in handling, transfer or clean up.

Prevent dust accumulation.

Implement routine housekeeping practices to ensure that dusts do not accumulate on surfaces.

Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.

Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.

Container hazardous when empty.

RESIDUAL DUSTS MAY EXPLODE ON IGNITION.

DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.

Improper disposal or reuse of this container may be dangerous and/or illegal.

Emptied container retains product residue.

**Storage****General information on storage conditions:**

Keep in a dry, cool place. Keep container closed when not in use. Store in original container. Store in upright position only. Outside or detached storage is preferred. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. Store in well ventilated area away from heat and sources of ignition such as flame, sparks and static electricity. Ensure that all storage and handling equipment is properly grounded and installed to satisfy electrical classification requirements. Store out of direct sunlight in a cool well-ventilated place. Store away from combustibles and materials to avoid. Static electricity may accumulate when transferring material. All metal and groundable storage containers, including but not limited to drums, cylinders, Returnable Intermodal Bulk Containers (RIBCs) and Class C Flexible Intermodal Bulk Containers (FIBCs) must be bonded and grounded during filling and emptying operations. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes, which pertain to the specific local conditions of storage and use, including NFPA 654.

Refer also to National Fire Protection Association (NFPA) Code 400, Hazardous Materials Code. Observe all federal, state and local regulations and National Fire Protection Association (NFPA) Codes which pertain to the specific local conditions of storage and use, including OSHA 29 CFR 1910.106 and NFPA 30, 70, 77, and 497.

**Storage stability – Remarks:**

Follow the recommended storage temperatures provided in this Section in order to maintain stability and oxygen content.

**Storage incompatibility – General:**

Store away from excessive heat, sources of ignition, and reactive materials.

Store separate from:

Strong acids

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Strong oxidizing agents

Reducing agents

Accelerators

Friedel - Crafts reaction catalyst

Iron

Copper

Brass

For all Organic Peroxides, compatible materials of contact are stainless steel 304 or 316 (preferred), high-density polyethylene (HDPE), polytetrafluoroethylene or glass linings.

**Temperature tolerance – Do not store above:**

100 °F (38 °C)

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Airborne Exposure Guidelines:**

**Carbonic acid calcium salt (1:1) (471-34-1)**

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Form:	Respirable fraction.
PEL:	5 mg/m <sup>3</sup>

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Form:	Total dust
PEL:	15 mg/m <sup>3</sup>

**Silica gel, pptd., cryst.-free (112926-00-8)**

US. OSHA Table Z-3 (29 CFR 1910.1000)

Time weighted average	20millions of particles per cubic foot of air
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US. OSHA Table Z-3 (29 CFR 1910.1000)

Time weighted average	0.8 mg/m <sup>3</sup>
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**Remarks:** The exposure limit is calculated from the equation,  $80/(\%SiO_2)$ , using a value of 100% SiO<sub>2</sub>. Lower values of % SiO<sub>2</sub> will give higher exposure limits.

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

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**Engineering controls:**

Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Check that all dust control equipment such as local exhaust ventilation, material transport systems, and air-material separation devices involved in handling this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Isolation devices may be appropriate to prevent propagation from one unit to another. Ensure that dust-handling systems are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Consult ACGIH ventilation manual, NFPA Standard 91 and NFPA Standard 654 for design of exhaust system and safe handling.

**Respiratory protection:**

Avoid breathing dust. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

**Skin protection:**

Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse immediately if skin is contaminated. Wash contaminated clothing and clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

**Eye protection:**

Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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<b>Color:</b>	Whitish.
<b>Physical state:</b>	solid
<b>Form:</b>	powder
<b>Odor:</b>	Slightly irritating
<b>Odor threshold:</b>	No data available
<b>Flash point</b>	The flashpoint of this product is greater than the Self Acceleration Decomposition Temperature (SADT).
<b>Auto-ignition temperature:</b>	No data available.



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<b>Lower flammable limit (LFL):</b>	No data available
<b>Upper flammable limit (UFL):</b>	No data available
<b>pH:</b>	Not applicable
<b>Density:</b>	No data available.
<b>Specific Gravity (Relative density):</b>	No data available
<b>Boiling point/boiling range:</b>	No data available
<b>Melting point/range:</b>	No data available
<b>Freezing point:</b>	No data available
<b>Evaporation rate:</b>	No data available
<b>Solubility in water:</b>	negligible
<b>Burning rate:</b>	6.1 mm/s (Method: The Manual of Tests and Criteria - Part 33.2.1) Wetted zone does not stop fire.
<b>Viscosity, dynamic:</b>	No data available
<b>Oil/water partition coefficient:</b>	No data available.
<b>Self-Accelerating Decomposition Temperature (SADT):</b>	194 °F (90 °C) (Method: Heat Accumulation Storage Test)
<b>Thermal decomposition:</b>	No data available
<b>Active oxygen content:</b>	3.59 - 3.97 %
<b>Flammability:</b>	See GHS Classification in Section 2

<b>10. STABILITY AND REACTIVITY</b>
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**Stability:**  
This material is chemically unstable and should only be handled under specified conditions. See HANDLING AND STORAGE section of this SDS for specified conditions.

**Hazardous reactions:**  
Hazardous polymerization does not occur.

**Materials to avoid:**  
Strong acids

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Strong oxidizing agents  
Reducing agents  
Accelerators  
Friedel - Crafts reaction catalyst  
Brass  
Copper  
Iron

For all Organic Peroxides, compatible materials of contact are stainless steel 304 or 316 (preferred), high-density polyethylene (HDPE), polytetrafluoroethylene or glass linings.

**Conditions / hazards to avoid:**

See HANDLING AND STORAGE section of this SDS for specified conditions. SADT - Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction. This reaction will generate flammable vapors which may autoignite. The length of time to generate a decomposition reaction, after the SADT has been reached or exceeded, is dependent upon how much the SADT has been exceeded and the length of time needed for the reaction exotherm (heat spike from increasing decomposition rate) to initiate a rapid decomposition reaction. Typically, SADT is inversely proportional to package size. Larger packages will have a lower SADT due to smaller ratio to heat transfer area to volume of product.

**Hazardous decomposition products:**

Temperatures at or above SADT can result in the release of hazardous decomposition products which are flammable and may autoignite.

Thermal decomposition giving flammable and toxic products :

Carbon oxides  
Aromatic derivatives  
Hazardous organic compounds

**11. TOXICOLOGICAL INFORMATION**

Data on this material and/or its components are summarized below.

**Oral:**

Acute toxicity estimate > 5,000 mg/kg.

**Data for Carbonic acid calcium salt (1:1) (471-34-1)****Acute toxicity****Oral:**

No deaths occurred. (rat) LD0 > 2,000 mg/kg.

**Dermal:**

No deaths occurred. (rat) LD0 >= 2,000 mg/kg.

**Inhalation:**

No deaths occurred. (rat) 4 h LCO > 3 mg/l. (dust/mist, Maximum concentration technically possible)

**Skin Irritation:**

Not irritating. (rabbit) Irritation Index: 0.0 / 8.0. (4 h)

**Eye Irritation:**

Causes mild eye irritation. (rabbit)

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**Skin Sensitization:**

Not a sensitizer. LLNA: Local Lymph Node Assay. (mouse) No skin allergy was observed

**Repeated dose toxicity**

Repeated oral administration to rat, mouse / No adverse systemic effects reported.

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

**Developmental toxicity**

Exposure during pregnancy. Oral (sheep) / bone effects in lambs (at doses that produce effects in mothers, blood chemistry changes)

Exposure during pregnancy. Oral (rat) / No birth defects were observed.

**Reproductive effects**

Reproductive/Developmental Effects Screening Assay. Oral (rat) / No toxicity to reproduction

**Human experience****General:**

Dust contact with the eyes can lead to mechanical irritation. Contact with dust can cause mechanical irritation or drying of the skin.

**Human experience****Inhalation:**

Upper respiratory tract: Local irritation, coughing. (dust) (severity of effects depends on extent of exposure)

**Human experience****Ingestion:**

Kidney: failure, weakness, nausea. (effects of excessive exposure)

**Data for Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl) (25155-25-3)]****Acute toxicity****Oral:**

No deaths occurred. (rat) LD0 > 2,000 mg/kg. (98 %)

**Dermal:**

No deaths occurred. (rat) LD0 > 2,000 mg/kg. (97 %)

**Skin Irritation:**

Not irritating. (rabbit) (4 h)

**Eye Irritation:**

Causes mild eye irritation. (rabbit)

**Skin Sensitization:**

Not a sensitizer. LLNA: Local Lymph Node Assay. (mouse) No skin allergy was observed (98 %)

**Repeated dose toxicity**

Repeated oral administration to rat / affected organ(s): kidney / signs: changes in organ structure or

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function, hyaline droplet nephropathy

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

**Developmental toxicity**

Exposure during pregnancy. Oral (rat) / At high dose : Malformations were observed.

**Reproductive effects**

Reproductive/Developmental Effects Screening Assay. Oral (rat) / Effects on fertility / (levels produced toxic effects in the mothers and offspring, smaller litter sizes, reductions in birth weight)

**Human experience****Inhalation:**

Respiratory tract: irritation. Dust and/or vapor are reported to cause irritation when proper industrial hygiene controls/procedures are not used.

**Human experience****Eye contact:**

Eyes: irritation. (based on reports of occupational exposure to workers) Dust and/or vapor are reported to cause irritation when proper industrial hygiene controls/procedures are not used.

**Data for Anti-oxidizing agent (Proprietary)****Acute toxicity****Oral:**

Harmful if swallowed. (rat) LD50 = 1,053 mg/kg.

**Dermal:**

No deaths occurred. (rat) LD0 > 2,000 mg/kg.

**Skin Irritation:**

Practically non-irritating. (rabbit)

**Eye Irritation:**

Causes serious eye damage. (rabbit)

**Skin Sensitization:**

Not a sensitizer. Buehler method. (Guinea pig) No skin allergy was observed

**Repeated dose toxicity**

Repeated oral administration to rat / affected organ(s): blood, spleen, liver, kidney / signs: changes in organ structure or function

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in a laboratory test using: animal cells

Genetic changes were observed in a laboratory test using: bacteria

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**Genotoxicity****Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: mice, rats

**Data for Peroxide, 1,1-dimethylethyl 1-methyl-1-[3-(1-methylethenyl)phenyl]ethyl (96319-55-0)****Acute toxicity****Oral:**

May be harmful if swallowed. (rat) LD50 = 4,700 mg/kg.

**Dermal:**

No deaths occurred. (rat) LD0 > 2,000 mg/kg.

**Inhalation:**

No deaths occurred. (rat) 4 h LCO = 1.2 mg/l. (vapour)

**Skin Irritation:**

Causes mild skin irritation. (rabbit) Irritation Index: 2.9/8. (4 h)

Causes skin irritation. (rabbit) Irritation Index: 3.8/8. (24 h) (occluded exposure)

**Eye Irritation:**

Not irritating. (rabbit)

**Skin Sensitization:**

Not a sensitizer. Guinea pig maximization test. Skin allergy was observed. (Weak response)

**Repeated dose toxicity**

Repeated oral administration to rat / affected organ(s): liver, kidney / signs: reduced body weight, changes in organ weights, changes in organ structure or function

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

**Reproductive effects**

Reproductive/Developmental Effects Screening Assay. Oral (rat) / At high dose : Effects on fertility and offspring / (toxic effects also observed in the parental animals at these doses)

**Other information**

The information presented is from a representative material with a similar structure. The results vary depending on the size and composition of the test substance.

**Data for Silica (7631-86-9)****Acute toxicity****Oral:**

Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

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**VUL-CUP® 40C-SP2****Dermal:**

Practically nontoxic. (rabbit) LD50 > 5,000 mg/kg.

**Inhalation:**

No deaths occurred. (rat) 4 h LC0 >= 2.08 mg/l. (dust/mist)

**Skin Irritation:**

Not irritating. (rabbit) Irritation Index: 0/8. (4 h)

**Eye Irritation:**

Not irritating. (rabbit) OECD Test Guideline 405

**Repeated dose toxicity**

Repeated inhalation administration to rat / affected organ(s): lung, lymph node / signs: inflammation / No adverse systemic effects reported. (Local effects, reversible)

Repeated dietary administration to rat / No adverse systemic effects reported.

**Carcinogenicity**

Chronic dietary administration to rat and mouse / affected organ(s): lung / No increase in tumor incidence was reported.

Classified by the International Agency for Research on Cancer as: Group 3: Unclassifiable as to carcinogenicity in humans.

**Genotoxicity****Assessment in Vitro:**

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells, yeast

**Genotoxicity****Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: rats

**Developmental toxicity**

Exposure during pregnancy. oral (rat, rabbit, hamster, mouse) / No birth defects were observed.

**Reproductive effects**

Reproduction Test. oral (rat) / No toxicity to reproduction.

**Other information**

Information given is based on data obtained from similar substances.

**Human experience****Inhalation:**

Respiratory system: No increase in tumor incidence was reported. No significant impairment of lung function. (based on reports of occupational exposure to workers)

**12. ECOLOGICAL INFORMATION****Chemical Fate and Pathway**

Data on this material and/or its components are summarized below.

**VUL-CUP® 40C-SP2****Data for Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl) (25155-25-3)****Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 0 %

**Bioaccumulation:**

calculated = 536

**Octanol Water Partition Coefficient:**

log Pow: = 7.368 °F (20 °C) (Method: calculated)

**Data for Anti-oxidizing agent (Proprietary)****Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 9 %

**Octanol Water Partition Coefficient:**

log Pow: = 0.55(Method: calculated)

**Data for Peroxide, 1,1-dimethylethyl 1-methyl-1-[3-(1-methylethenyl)phenyl]ethyl (96319-55-0)****Biodegradation:**

Not readily biodegradable. (58 d) biodegradation 0 %

**Octanol Water Partition Coefficient:**

log Pow: = 4.4, = 77 °F (25 °C)

**Mobility and Distribution in the Environment:**

Log Koc = 3.3

**Additional Information:**

Information given is based on data obtained from similar substances.

**Data for Silica (7631-86-9)****Octanol Water Partition Coefficient:**

log Pow: = 0.53(Method: calculated)

**Ecotoxicology**

Data on this material and/or its components are summarized below.

**Data for Carbonic acid calcium salt (1:1) (471-34-1)****Aquatic toxicity data:**

No effect up to the limit of solubility. Oncorhynchus mykiss (rainbow trout) 96 h LC50 &gt; 100 mg/l

**Aquatic invertebrates:**

No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 &gt; 100 mg/l

**Algae:**

No effect up to the limit of solubility. Desmodesmus subspicatus (green algae) 72 h EC50 &gt; 14 mg/l

**Microorganisms:**

Respiration inhibition / Activated sludge 3 h EC50 &gt; 1,000 mg/l

**VUL-CUP® 40C-SP2****Chronic toxicity to aquatic plants:**

Desmodesmus subspicatus (green algae) 72 h ErC10 (No effect up to the limit of solubility)

**Data for Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl) (25155-25-3)****Aquatic toxicity data:**

No effect up to the limit of solubility. Poecilia reticulata (guppy) 96 h LC50 = 750 mg/l (Nominal concentration, similar material, Water accommodated fraction was tested.)

**Aquatic invertebrates:**

No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC0 > 1 mg/l (Nominal concentration, Water accommodated fraction was tested.)

**Algae:**

No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h EC0 > 1 mg/l (Nominal concentration, Water accommodated fraction was tested.)

**Microorganisms:**

Practically nontoxic. Respiration inhibition / Activated sludge 30 min EC0 > 1,000 mg/l (Nominal concentration, similar material, Water accommodated fraction was tested.)

**Chronic toxicity to aquatic plants:**

No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h NOEC r

**Data for Anti-oxidizing agent (Proprietary)****Aquatic toxicity data:**

Practically nontoxic. Danio rerio (zebra fish) 96 h LC50 = 545 mg/l

**Aquatic invertebrates:**

Harmful. Daphnia magna (Water flea) 48 h EC50 = 54 mg/l

**Algae:**

Practically nontoxic. Desmodesmus subspicatus (green algae) 72 h ErC50 = 1,038 mg/l

**Microorganisms:**

Pseudomonas putida 16 h EC50 = 890 mg/l

**Chronic toxicity to aquatic invertebrates:**

Daphnia (water flea) 21 d NOEC = 1.5 mg/l

**Data for Peroxide, 1,1-dimethylethyl 1-methyl-1-[3-(1-methylethenyl)phenyl]ethyl (96319-55-0)**

Information given is based on data obtained from similar substances.

**Aquatic invertebrates:**

Toxic. Daphnia magna (Water flea) 48 h EC50 = 4.3 mg/l

**Algae:**

No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 > 100 mg/l (nominal concentrations reported)



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**Microorganisms:**

No effect up to the limit of solubility. Activated sludge 58 h NOEC (Respiration inhibition) = 100 mg/l (nominal concentrations reported)

**Data for Silica (7631-86-9)**

**Aquatic toxicity data:**

No effect up to the limit of solubility. Danio rerio (zebra fish) 96 h LC0 > 10,000 mg/l (nominal concentrations reported)

**Aquatic invertebrates:**

No effect up to the limit of solubility. Daphnia magna (Water flea) 24 h LC0 > 10,000 mg/l (nominal concentrations reported)

**Algae:**

No effect up to the limit of solubility. Desmodesmus subspicatus (green algae) 72 h EC0 > 10,000 mg/l (nominal concentrations reported)

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal:**

Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

**14. TRANSPORT INFORMATION**

**US Department of Transportation (DOT)**

UN Number : 1325  
 Proper shipping name : Flammable solids, organic, n.o.s.  
 Technical name : (Di-(tert-butylperoxyisopropyl) benzene, <=42%)  
 Class : 4.1  
 Packaging group : II  
 Marine pollutant : no

**International Maritime Dangerous Goods Code (IMDG)**

UN Number : 1325  
 Proper shipping name : FLAMMABLE SOLID, ORGANIC, N.O.S.  
 Technical name : (DI-(TERT-BUTYLPEROXYISOPROPYL)BENZENE, <=42%)  
 Class : 4.1  
 Packaging group : II  
 Marine pollutant : no

**15. REGULATORY INFORMATION**

**VUL-CUP® 40C-SP2**

**Chemical Inventory Status**

US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Does not conform
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Does not conform
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to

**United States – Federal Regulations**

**SARA Title III – Section 302 Extremely Hazardous Chemicals:**

The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

**SARA Title III - Section 311/312 Hazard Categories:**

Acute Health Hazard, Reactivity Hazard, Fire Hazard

**SARA Title III – Section 313 Toxic Chemicals:**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):**

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

**United States – State Regulations**

**New Jersey Right to Know**

<u>Chemical name</u>	<u>CAS-No.</u>
Carbonic acid calcium salt (1:1)	471-34-1

**VUL-CUP® 40C-SP2**

Silica gel, pptd., cryst.-free 112926-00-8

**Pennsylvania Right to Know**

<u>Chemical name</u>	<u>CAS-No.</u>
Carbonic acid calcium salt (1:1)	471-34-1

Peroxide, [1,3(or 1,4)-phenylenebis(1-methylethylidene)]bis[(1,1-dimethylethyl)	25155-25-3
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Silica gel, pptd., cryst.-free 112926-00-8

Anti-oxidizing agent Proprietary

**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

**16. OTHER INFORMATION**

**Full text of H-Statements referred to under sections 2 and 3.**

- H228 Flammable solid.
- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H402 Harmful to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.
- H413 May cause long lasting harmful effects to aquatic life.

Miscellaneous:

Other information: Refer to National Fire Protection Association (NFPA) Code 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

Latest Revision(s):

Reference number:	200013682
Date of Revision:	09/29/2017
Date Printed:	09/30/2017

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**VUL-CUP® 40C-SP2**

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