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Material Safety Data Sheet

1. Product Identifier and Company Information

Product: Dicumyl Peroxide

Product label name: DCP

English name: Dicumyl peroxide

Formula: $C_{18}H_{22}O_2$ Molecular weight: 270.4

Company name： Dakings Chemical (Shandong) Co., Ltd

Address: Moscow Road, Qingdao Qianwan Bonded Port Area, Shandong Pilot Free Trade Zone, China

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MSDSno.:RH-02

Effective date: 2021-05-18

Emergency telephone: +8617685872921

Ⅱ Composition/Information on Ingredients

Composition: Pure substance

Information on ingredients	Concentration	CAS No.
Dicumyl peroxide crystal	＞99%	80-43－3

Ⅲ Hazards Identification

Hazard classification: Organic peroxides 5.2

Infection approach: Inhalation, ingestion, skin.

Health Hazard: Harmful in contact with inhalation, ingestion and skin. High concentration may cause iritation to eyes, skin, mucosa, and the upper respiratory tract. If contacted, cause burning sensation， cough, laryngitis， headache， nausea， and vomit.

Ecotoxicity: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Explosive danger：Inflammable, toxic, strong irritation.

4. First Aid Measures

Skin contact: Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Get medical attention if irritation persists.

Eye contact: Immediately file the eyelid, start continuous flushing of eyes with water for at least 15 minutes. Get medical attention immediately.

Inhalation：Remove to fresh air. Preserve the fluent respiratory tract. If not well breathing, oxygen may additionally be given. If not breathing, give artificial respiration. Get medical attention immediately.

Ingestion：Rinse the mouth with water. Induce vomiting with milk. Get medical attention.

5. Fire-Fighting Measures

Hazard characteristics: Inflammable, strong oxidation. The fierce response occurs with heat, open flame, acid, alkali, reducing agent, accelerating agent, organic matter, inflammables. Easy to burn and explode.

Hazardous decomposition / combustion products: CO2, Carbon monoxide, Carbon dioxide, Methane, Acetophenone, 2-Phenylisopropanol.

Extinguishing method and extinguishing media: Firefighters wear approved filter type BA (Full) or respirator and full-body fire suit. Extinguish the fire in the upwind. Move the vessels to open space if possible. Spray water to cool down vessels in fire scene till the fire is extinguished

Extinguishing media: Dry powder, CO_2. Sand cover is forbidden. Halogenated fire extinguishing agent is unsuitable.

Precautions: Water used to extinguish a fire should not be allowed to enter water courses.

6. Accidental Release Measures

Emergency handling: Move and clean up the ignition source. Transfer remaining product to a container. If allowed, water the place to prevent the dust. Collect residue and transfer to a safe place. The product is not allowed to enter the environment.

Personal protective equipment: P2 air-purifying respirators suitable for noxious particles.

7. Handling and Storage

Precautions for safe handling: Use explosion-proof ventilating system and equipment for partial air draft and general ventilation. Operating personnel must be well trained and observe operating instructions. No smoking at the workplace. Operating personnel are suggested to wear P2 air-purifying respirators suitable for noxious particles and rubber oil-resistant gloves. Keep away from sources of ignition, heat, inflammables, or combustibles. Avoid contact with reducing agents, accelerating agent, organic matter, acids, and alkalis. Load and discharge lightly when carrying. Avoid collision and turnover. Prevent breaking the package and leakage. Storage areas should be equipped with relevant varieties and quantities of fire equipment and emergency treatment equipment. Residues may remain in empty containers.

Condition for safe storage: Store in a dry well ventilated place away from sources of heat and ignition. Avoid storage temperatures above 30 °C. Keep the container sealed. Store separate from reducing agents, accelerating agent, organic matter, acids, alkalis, inflammables, or combustibles. Use explosion-proof lighting and ventilation. Forbid the use of mechanical equipment and tools easy to produce the spark.

8. Exposure Controls/Personal Protection

Maximum allowable concentration: no data

Monitoring method: gas chromatography

Engineering control: Airtight. Provide sufficient partial air draft and general ventilation.

Respiratory protection: when concentration is out of limits, filter type BA (Full) must be worn. Wear air-purifying respirators in the case of rescue and evacuation.

Eye: See respiratory protection.

Body: wear one-piece rubberized fabric gas protective clothing.

Hand: wear rubber oil-resistant gloves.

Other protection: No smoking,eating, drinking at workplace. Shower and change clothes after working. Have pre-job and regular physical examination. Maintain good hygiene habits.

9. Physical and Chemical Properties

Appearance:	White crystal solid
PH value	Neutral
Melting point(℃):	39.5
Boiling point(℃) :	Not applicable (Decomposes)
Relevant density:	1.10(water=1 20℃)
Bulk density:	660kg/m³（20℃）
Vapor pressure (kPa)	0.03PMa（101℃）
Viscosity (mPa.s):	Not applicable
Flash point(℃)	Not applicable
Auto ignition temperature(℃)	Not applicable
Combustion heat **(kJ/mol) :**	No data
Stagnation temperature**(℃)**	No data
Stagnation pressure (**kPa)**	No data
Partition coefficient octanol/water	5.5
Upper explosive limit %（V/V）	No data
Lower explosive limit **%（V/V）**	No data
Solubility in water	Insoluble in water , soluble in ethanol, ethyl ether

SADT	75℃

Main application: Vulcanizer for natural and synthetic rubber, initiator for bulk polymerization of styrene, polyolefin cross linking.

10. Stability and Reactivity

Stability: Unstable. When heated, it may decompose rapidly, burn and explode possibly in the light.

Incompatible materials:, reducing agent, accelerating agent, organic matter, inflammables or combustible, acid, alkali.

Conditions to avoid: fire, source of heat.

Polymerization harm: forbidden

Combustion products: CO, CO_2

Thermal decomposition products: acetophenone, carbinol, dimethyl phenylethyl carbinol

11. Toxicological Information

Acute toxicity: LD_{50}：4100mg/kg (Rat, by mouth)

Sub acute and chronic toxicity: No data

Irritation: No data

Sensitization: No data

Mutagenicity: Ames test, not mutagenic

Teratogenicity: No data

Carcinogenicity: No data

12. Ecological Information

Ecotoxicity： Fish Acute toxicity 96hLD50=108 mg/l (Carassius auralus)

Marine algae 72h LC50＞1000 mg/l

Bacteria Activated sludge respiration inhibition test>1000 mg/l

Degradation biotic: No data

No degradation biotic: No data

Biological enrichment or accumulation: No data

Other deleterious effects: Toxic to aquatic organisms. Biological accumulation occurs in food chain important to human beings, especially in fish.

13. Disposal Considerations

Waste properties: Dangerous.

Disposal information: controlling incineration is recommended. Mix with Incombustible material before incineration.

Waste considerations: Forbid to cumulate combustible waste in storage areas for hazardous chemicals. Transfer containers leaking hazardous chemicals to safe places. Clean the leakage, and don't abandon them at random in case environment is polluted.

14.Transport Information

Hazardous cargos no. :52030

UN No.: 3110

Packing sign: organic peroxide

Package Category: II

Packing method: Unrecyclable paper bag 4×5kg dicumyl peroxide

Product description: organic peroxide, crystal (dicumyl peroxide)

Transport information: railway transport: obey the dangerous goods compatibility table in "Transportation of Dangerous Goods Code" issued by Ministry of Railways. Load and transport separately. Avoid the leakage, collapse, drop, and the damage. Relevant kinds and quantities of fire equipments should be equipped on transport vehicles. Forbid to transport with acids, organic matters, reducing agents, spontaneously combustible, and inflammable materials when wet. Control the speed to avoid bumping and shaking. In summer, transport in the morning and dusk to prevent the sunlight insolation. Road transport: drive according to traffic regulations,

and don't stay in residential and congested areas. Wash and clean before and after loading and transport. Prohibit impurities like reducing agents, accelerating agent, organic matters inflammables, combustibles, acids and alkalis.

15. Regulatory Information

Regulatory information: Regulations on Safety Management of Dangerous Chemicals (No. 344 Order issued by the Sate Council on 26th, Jan, 2002), regulations on the Safe Handling of Chemicals in Workplace (No. 423 Order issued by Ministry of Labor [1996]) give out he corresponding requirements on dangerous chemicals in the areas of handling, production, storage, transport, and loading etc.. Common classifications and signs ((GB12268-2005)) divide it into organic peroxide of classification 5.2.

16. Other Information：

References:

Wang Guangsheng *Encyclopediafor Safety and Techniques of Dangerous Chemicals*, Chemical Industry Press, 2008

Zhang Weifan, *Common Classifications and Signs of Dangerous Chemicals*, China Press of Traditional Chinese Medicine.

Date: 8th, May, 2021

Department: Safety Department, Dakings Chemical (Shandong) Co., Ltd

Data Inspection: Production Department， Dakings Chemical (Shandong) Co., Ltd