SAFETY DATA SHEET

according to the Global Harmonized System and the National Code of Practice for the Preparation of Material Safety Data Sheets

PERKADOX PD-50S-PS

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1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Information

Trade name	:	PERKADOX PD-50S-PS
Proper shipping name	:	ORGANIC PEROXIDE TYPE D, SOLID
Use of the Substance/Mixture	:	Specific use(s): Cross-linking agent
Company	:	Akzo Nobel Functional Chemicals B.V. Velperweg 76 NL 6824 BM Arnhem Netherlands
Telephone	:	+31263664433
Telefax	:	+31263665830
E-mail address	:	RegulatoryAffairs@akzonobel.com
Emergency telephone number	:	24 hours:+31 57 06 79211, CHEMTREC-USA:1-800-424-9300, CANUTEC-CANADA:1-613-996-6666, 化学事故应急咨询电话： 国家化学事故应急响应中心 +86532 8388 9090

2. HAZARDS IDENTIFICATION

GHS Classification

Organic peroxides, Type D
Skin sensitisation, Category 1

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : H242 Heating may cause a fire.
H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. -

No smoking.
P220 Keep away from dirt, rust, chemicals in particular.
P234 Keep only in original container.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.

Other hazards which do not result in classification

No further data available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Remarks : Di(2,4-dichlorobenzoyl) peroxide, paste, 50% in silicone oil

Hazardous substance

Chemical Name	CAS-No.	Classification	Concentration [%]
Di(2,4-dichlorobenzoyl) peroxide	133-14-2	Org. Perox. D; H242 Skin Sens. 1; H317	>= 30 - < 60

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

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.

Inhalation : Consult a physician after significant exposure.

Skin contact : Take off contaminated clothing and shoes immediately.
Wash the skin immediately with soap and water.
If skin irritation persists, call a physician.

Eye contact : Rinse with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

Ingestion : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

Notes to physician

Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Treatment : Treat symptomatically.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

Specific hazards during firefighting / Specific hazards arising from the chemical : CAUTION: reignition may occur.
Supports combustion.
Do not use a solid water stream as it may scatter and spread

fire.
Water spray may be ineffective unless used by experienced firefighters.
Heating may cause decomposition with release of toxic fumes

Combustion products	:	Fire will produce smoke containing hazardous combustion products (see section 10).
Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition.
Environmental precautions	:	Prevent product from entering drains.
Methods for cleaning up / Methods for containment	:	Keep wetted with water. Soak up with inert absorbent material and dispose of as hazardous waste. Confinement must be avoided. Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal. Never return spills in original containers for re-use.
Additional advice	:	For personal protection see section 8.

7. HANDLING AND STORAGE

Handling

Advice on safe handling	:	For personal protection see section 8. Avoid formation of respirable particles. Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Smoking, eating and drinking should be prohibited in the application area. Open drum carefully as content may be under pressure.
Advice on protection against fire and explosion	:	Use explosion protected equipment. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. No sparking tools should be used. Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Do not cut or weld on or near this container even when empty. Keep away from combustible material.
Temperature class	:	It is recommended to use electrical equipment of temperature

group T3. However, autoignition can never be excluded.

Storage

Requirements for storage areas and containers	:	No smoking. Electrical installations / working materials must comply with the technological safety standards. Keep only in original container. Store away from other materials.
Storage temperature	:	For maximum quality: 30 °C
Maximum storage temperature:	:	30 °C
Other data	:	No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Appropriate engineering controls

Explosion proof ventilation recommended.

Personal protective equipment

Respiratory protection	:	Handle in accordance with good industrial hygiene and safety practice.
Hand protection	:	butyl-rubber Neoprene
Eye/face protection	:	Tightly fitting safety goggles
Skin and body protection	:	Protective suit
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Wash contaminated clothing before re-use.

Environmental exposure controls

General advice	:	Prevent product from entering drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	:	paste

Colour	:	white
Odour	:	faint
Odour Threshold	:	No data available

Safety data

pH	:	Weakly acidic
Melting point	:	Decomposes before melting.
Boiling point/boiling range	:	Decomposes below the boiling point.
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	Decomposition products may be flammable.
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Vapour pressure	:	Not applicable
Relative vapour density	:	Not applicable
Relative density	:	1.25 at 25 °C
Water solubility	:	at 20 °C insoluble
Solubility in other solvents	:	Soluble in most organic solvents.
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	Test method not applicable
Decomposition temperature	:	SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	:	60 °C
Viscosity, dynamic	:	at 20 °C thixotropic
Viscosity, kinematic	:	at 20 °C thixotropic

Explosive properties	:	Not explosive
Oxidizing properties	:	Not classified as oxidising.
Active Oxygen Content	:	2.1 %
Organic peroxides	:	50 %

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.

10. STABILITY AND REACTIVITY

Conditions to avoid	:	Confinement must be avoided. Heat, flames and sparks. For maximum quality: 30 °C For safety, store below: 30 °C
Materials to avoid	:	Contact with incompatible materials will result in hazardous decomposition. For queries regarding the suitability of other materials please contact the supplier. Do not mix with peroxide accelerators, unless under controlled processing. Use only stainless steel 316, PP, polyethylene or glass-lined equipment. Acids and bases Iron Copper Reducing agents Heavy metals Rust
Hazardous decomposition products	:	Carbon oxides 2,2'4,4'-Tetrachlorobiphenyl 1,3-Dichlorobenzene 2,4-Dichlorobenzoic acid Furan Silicon dioxide
Thermal decomposition	:	SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Reactivity	:	Stable under normal conditions.
Chemical stability	:	Stable under recommended storage conditions.

Hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Self-Accelerating decomposition temperature (SADT)	:	60 °C

11. TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION:

Hazard Summary

Inhalation	:	Not expected to be irritating.
Skin	:	Causes mild skin irritation. May cause an allergic skin reaction.
Eyes	:	May cause eye irritation.
Ingestion	:	Not expected to be irritating.

Toxicology Assessment

Further information	:	No further data available.

Component: Di(2,4-dichlorobenzoyl) peroxide

Acute oral toxicity	:	LD50: > 2,500 mg/kg Species: Rat
Skin irritation	:	Species: Rabbit Result: Mild skin irritation
Eye irritation	:	Species: Rabbit Result: Slightly irritating to eyes.
Sensitisation	:	Species: Rat Classification: May cause sensitisation by skin contact.
Repeated dose toxicity	:	Species: Rat Exposure time: 28 d () NOEL: 300 mg/kg

Germ cell mutagenicity

Genotoxicity in vitro	:	In vitro gene mutation study in mammalian cells mouse lymphoma cells Result: negative Method: OECD Test Guideline 476 Ames test Result: positive Chromosome aberration test in vitro Human lymphocytes Method: OECD Test Guideline 473
Genotoxicity in vivo	:	study scientifically unjustified

Target Organ Systemic Toxicant - Repeated exposure	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration toxicity	:	No aspiration toxicity classification

12. ECOLOGICAL INFORMATION

PRODUCT INFORMATION:

Ecotoxicology Assessment

Additional ecological information	:	None known.

Component: Di(2,4-dichlorobenzoyl) peroxide

Ecotoxicity effects

Toxicity to fish	:	LC50: > 1,000 mg/l Exposure time: 96 h Species: Poecilia reticulata (guppy) Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EL50: > 100 mg/l Exposure time: 48 h Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 202
Toxicity to algae	:	ErC50: > 100 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Test Type: Growth inhibition Method: OECD Test Guideline 201 NOEC: > 100 mg/l Exposure time: 72 h Species: Pseudokirchneriella subcapitata (green algae) Test Type: Growth inhibition Method: OECD Test Guideline 201
Toxicity to bacteria	:	EC10: 500 - 1,000 mg/l Exposure time: 0.5 h Species: activated sludge Test Type: Respiration inhibition Method: Domestic OECD Guideline 209

Elimination information (persistence and degradability)

Biodegradability	:	Result: Inherently biodegradable. Method: Closed Bottle test

13. DISPOSAL CONSIDERATIONS

Product	:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Hazardous waste Dispose of contents/container in accordance with local regulation.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not burn, or use a cutting torch on, the empty drum. Due to the high risk of contamination recycling/recovery is not recommended. Follow all warnings even after the container is emptied.

14. TRANSPORT INFORMATION

International Regulation

IATA-DGR

UN/ID No.	:	UN 3106
Proper shipping name	:	Organic peroxide type D, solid (Di(2,4-dichlorobenzoyl) peroxide)
Class	:	5.2
Subsidiary risk	:	HEAT
Packing group	:	Not Assigned
Labels	:	5.2 (HEAT)
Packing instruction (cargo aircraft)	:	570
Packing instruction (passenger aircraft)	:	570
Environmentally hazardous	:	no

IMDG-Code

UN number	:	UN 3106
Proper shipping name	:	ORGANIC PEROXIDE TYPE D, SOLID (Di(2,4-dichlorobenzoyl) peroxide)
Class	:	5.2
Packing group	:	Not Assigned
Labels	:	5.2
EmS Code	:	F-J, S-R
Marine pollutant	:	no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

ADG

UN number	:	UN 3106
Class	:	5.2 Not permitted for transport

15. REGULATORY INFORMATION

Notification status

CH INV : NO. The mixture contains a polymer. The monomers for this polymer

have been notified.

TSCA	:	YES. All chemical substances in this product are either listed on the TSCA Inventory or in compliance with a TSCA Inventory exemption.
DSL	:	YES. All components of this product are on the Canadian DSL.
AICS	:	YES. On the inventory, or in compliance with the inventory
NZIoC	:	YES. On the inventory, or in compliance with the inventory
ENCS	:	YES. On the inventory, or in compliance with the inventory
ISHL	:	YES. On the inventory, or in compliance with the inventory
KECI	:	YES. On the inventory, or in compliance with the inventory
PICCS	:	YES. On the inventory, or in compliance with the inventory
IECSC	:	YES. On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.

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

Prohibition/Licensing Requirements :

Standard for the Uniform Scheduling of Medicines and Poisons : No poison schedule number allocated

16. OTHER INFORMATION

Full text of H-Statements

H242	:	Heating may cause a fire.
H317	:	May cause an allergic skin reaction.

Notification status explanation

CH INV	Switzerland. New notified substances and declared preparations
TSCA	United States TSCA Inventory
DSL	Canadian Domestic Substances List (DSL)
AICS	Australia Inventory of Chemical Substances (AICS)
NZIoC	New Zealand. Inventory of Chemical Substances
ENCS	Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL	Japan. ISHL - Inventory of Chemical Substances
KECI	Korea. Korean Existing Chemicals Inventory (KECI)
PICCS	Philippines Inventory of Chemicals and Chemical Substances (PICCS)
IECSC	China. Inventory of Existing Chemical Substances in China (IECSC)

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet.