

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



DHBP-1-IC5

Version
1.2

Revision Date:
30.04.2018

SDS Number:
600000000172

Print Date:
30.04.2018

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

1.1 Product identifier

Trade name : DHBP-1-IC5

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

Use of the Sub-
stance/Mixture : polymerisation initiators

1.3 Details of the supplier of the safety data sheet

Company : United Initiators GmbH
Dr.-Gustav-Adolph-Str. 3
82049 Pullach

E-mail address of person
responsible for the SDS : contact@united-in.com

1.4 Emergency telephone number

+49 / 89 / 74422 – 0 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture.

Precautionary statements :

Prevention:

P220 Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials.

P233 Keep container tightly closed.

P235 Keep cool.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Disposal:

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

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2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Solid mixture

Hazardous components

Chemical name	CAS-No. EC-No. Registration number	Classification	Concentration (% w/w)
2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane	78-63-7 201-128-1 01-2119875400-42	Org. Perox. C; H242 Skin Irrit. 2; H315	>= 1 - <= 5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Do not leave the victim unattended.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of eye contact : Remove contact lenses.
Protect unharmed eye.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.

4.2 Most important symptoms and effects, both acute and delayed

None known.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray

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Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

The product burns violently.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.
Remove undamaged containers from fire area if it is safe to do so.
Use water spray to cool unopened containers.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Avoid dust formation.
Follow safe handling advice and personal protective equipment recommendations.
Treat recovered material as described in the section "Disposal considerations".

6.2 Environmental precautions

Environmental precautions : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Clear spills immediately.
To clean the floor and all objects contaminated by this material, use plenty of water.

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Soak up with inert absorbent material.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Advice on safe handling : Provide sufficient air exchange and/or exhaust in work rooms. Smoking, eating and drinking should be prohibited in the application area.
Wash thoroughly after handling.
For personal protection see section 8.
- Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.
- Hygiene measures : Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with the particular national regulations.
- Recommended storage temperature : < 40 °C

7.3 Specific end use(s)

- Specific use(s) : For further information, refer to the product technical data sheet.
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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	Workers	Skin contact	Long-term systemic effects	15 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	11 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane	Fresh water	0.0065 mg/l
	Marine water	0.00065 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	72.2 mg/kg
	Marine sediment	7.22 mg/kg
	Soil	14.4 mg/kg

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

Personal protective equipment

Eye protection : Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.
Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection

Material : butyl-rubber
Break through time : \geq 480 min
Glove thickness : 0.5 mm

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : ABEK-filter

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	powder
Colour	:	white
Odour	:	ether-like
Odour Threshold	:	Not relevant
pH	:	No data available
Melting point/range	:	Decomposition: Decomposes below the melting point.
Boiling point/boiling range	:	Not applicable
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Flammability (solid, gas)	:	does not ignite
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	No data available
Density	:	0.37 g/cm ³ (20 °C)
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Self-Accelerating decomposition temperature (SADT)	:	80 °C Method: UN-Test H.4 SADT-Self Accelerating Decomposition Temperature. Lowest
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temperature at which the tested package size will undergo a self-accelerating decomposition reaction.

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

10.6 Hazardous decomposition products

Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rabbit): 4,100 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

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Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Species: Guinea pig
Method: OECD Test Guideline 406
Result: Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative
: Method: OECD Test Guideline 476
Result: negative
Genotoxicity in vivo : Species: Mouse (male and female)
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Remarks: This information is not available.

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Reproductive toxicity

Not classified based on available information.

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Effects on fertility : Remarks: No data available

Effects on foetal development : Species: Rat
Application Route: oral (gavage)
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Method: OECD Test Guideline 414

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Species: Rat
NOAEL: 200 mg/kg
Application Route: Oral
Exposure time: 28 d
Method: OECD Test Guideline 407

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 4.5 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: No toxicity at the limit of solubility

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 6.17

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mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility

NOEC (Pseudokirchneriella subcapitata (green algae)): 1.88
mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: No toxicity at the limit of solubility

Toxicity to microorganisms : EC50 (Bacteria): > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to daphnia and other : NOEC: > 0.02 mg/l
aquatic invertebrates (Chronic toxicity)
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:

2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane:

Bioaccumulation : Bioconcentration factor (BCF): 521

Partition coefficient: n-octanol/water : log Pow: 7.34

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

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0.1% or higher..

12.6 Other adverse effects

Product:

Additional ecological information : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Dispose of in accordance with local regulations.
Dispose of contents/ container to an approved waste disposal plant.
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SECTION 14: Transport information

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

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REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.
Not applicable

Other regulations : Gefahrengruppe nach § 3 BGV B4: II (German regulatory requirements)

The components of this product are reported in the following inventories:

DSL (CA) : All components of this product are on the Canadian DSL

AICS (AU) : On the inventory, or in compliance with the inventory

NZIoC (NZ) : On the inventory, or in compliance with the inventory

ENCS (JP) : On the inventory, or in compliance with the inventory

ISHL (JP) : On the inventory, or in compliance with the inventory

KECI (KR) : On the inventory, or in compliance with the inventory

PICCS (PH) : On the inventory, or in compliance with the inventory

IECSC (CN) : On the inventory, or in compliance with the inventory

TCSI (TW) : On the inventory, or in compliance with the inventory

TSCA (US) : On TSCA Inventory

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H242 : Heating may cause a fire.

H315 : Causes skin irritation.

Full text of other abbreviations

Org. Perox. : Organic peroxides

Skin Irrit. : Skin irritation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society

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for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

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.

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