

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

### SECTION 1. IDENTIFICATION

Product name : DHBP

#### Manufacturer or supplier's details

Company name of supplier : United Initiators, Inc.

Address : 555 Garden Street  
Elyria OH 44035

Telephone : +1-440-323-3112

Telefax : +1-440-323-2659

Emergency telephone : CHEMTREC US (24h): +1-800-424-9300  
CHEMTREC WORLD (24h): +1-703-527-3887

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

#### Recommended use of the chemical and restrictions on use

Recommended use : polymerization initiators

---

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 4

Organic peroxides : Type C

Skin irritation : Category 2

#### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H227 Combustible liquid.  
H242 Heating may cause a fire.  
H315 Causes skin irritation.

Precautionary Statements : **Prevention:**  
P210 Keep away from heat/sparks/open flames/hot surfaces.  
No smoking.  
P220 Keep/Store away from clothing/ strong acids, bases,  
heavy metal salts and other reducing substances /combustible

---

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

materials.  
P234 Keep only in original container.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P362 Take off contaminated clothing and wash before reuse.  
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

**Storage:**

P410 Protect from sunlight.  
P411 + P235 Store at temperatures not exceeding 40 °C/ 104 °F. Keep cool.  
P420 Store away from other materials.

**Disposal:**

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

**Other hazards**

None known.

---

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance  
Chemical nature : Organic Peroxide liquid  
Substance name : 2,5-Dimethyl-2,5-di (tert-butylperoxy)hexane  
CAS-No. : 78-63-7

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
2,5-Dimethyl-2,5-di(tert.-butylperoxy)hexane	78-63-7	<= 100

---

### SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.  
Show this material safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.  
Call a physician immediately.

If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.

---

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

- If breathed in, move person into fresh air.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Wash contaminated clothing before re-use.  
If on skin, rinse well with water.  
If on clothes, remove clothes.  
If symptoms persist, call a physician.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
Call a physician immediately.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- Notes to physician : Treat symptomatically and supportively.
- 

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray jet  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.  
  
The product burns violently.  
Flash back possible over considerable distance.  
Vapors may form explosive mixtures with air.  
The product will float on water and can be reignited on surface water.  
Cool closed containers exposed to fire with water spray.
- Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.

# SAFETY DATA SHEET

## DHBP



Version	Revision Date:	SDS Number:	Date of last issue: 04/30/2018
1.2	08/02/2019	600000000007	Date of first issue: 05/31/2017

---

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

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Remove all sources of ignition.  
Follow safe handling advice and personal protective equipment recommendations.  
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.  
Never return spills in original containers for re-use.  
Treat recovered material as described in the section "Disposal considerations".
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contact with incompatible substances can cause decomposition at or below SADT.  
Clear spills immediately.  
Suppress (knock down) gases/vapors/mists with a water spray jet.  
To clean the floor and all objects contaminated by this material, use plenty of water.  
Soak up with inert absorbent material.  
Isolate waste and do not reuse.  
Non-sparking tools should be used.  
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.
- 

### SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
-

# SAFETY DATA SHEET

## DHBP



Version	Revision Date:	SDS Number:	Date of last issue: 04/30/2018
1.2	08/02/2019	600000000007	Date of first issue: 05/31/2017

---

- Advice on protection against fire and explosion : Keep away from heat and sources of ignition.  
Use only explosion-proof equipment.  
Keep away from combustible material.
- Advice on safe handling : Do not swallow.  
Do not breathe vapors/dust.  
Avoid contact with skin and eyes.  
Avoid formation of aerosol.  
Take precautionary measures against static discharges.  
Never return any product to the container from which it was originally removed.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Avoid confinement.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Smoking, eating and drinking should be prohibited in the application area.  
Wash thoroughly after handling.  
For personal protection see section 8.  
Protect from contamination.
- Conditions for safe storage : Avoid impurities (e.g. rust, dust, ash), risk of decomposition.  
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 original container.  
Keep containers tightly closed in a cool, well-ventilated place.  
Store in accordance with the particular national regulations.
- Materials to avoid : Keep away from strong acids, bases, heavy metal salts and other reducing substances.
- Recommended storage temperature : 10 - 40 °C  
50 - 104 °F
- Further information on storage stability : No decomposition if stored normally.

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : Minimize workplace exposure concentrations.

### Personal protective equipment

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

Filter type : ABEK-filter

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

- 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 Wash hands before breaks and at the end of workday.
- 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.
- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
- 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.

---

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Color : colorless
- Odor : ether-like
- Odor Threshold : No data available
- pH : No data available
- Melting point/freezing point : No data available
- Initial boiling point and boiling range : Decomposition: Decomposes below the boiling point.
- Flash point : 74 °C  
Method: ISO 3679



# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

- Conditions to avoid : Protect from contamination.  
Contact with incompatible substances can cause decomposition at or below SADT.  
Heat, flames and sparks.  
Avoid confinement.
- Incompatible materials : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents
- Hazardous decomposition products : Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition
- 

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Not classified based on available information.

#### Product:

- 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 inhalation toxicity : Method: Expert judgment  
Assessment: The substance or mixture has no acute inhalation 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

#### 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 inhalation toxicity : Method: Expert judgment  
Assessment: The substance or mixture has no acute inhalation 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

Causes skin irritation.



# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

### **Product:**

Remarks : May cause skin irritation in susceptible persons.

### **Components:**

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

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

#### **Serious eye damage/eye irritation**

Not classified based on available information.

### **Product:**

Remarks : Vapors may cause irritation to the eyes, respiratory system and the skin.

### **Components:**

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

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

#### **Respiratory or skin sensitization**

##### **Skin sensitization**

Not classified based on available information.

##### **Respiratory sensitization**

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 sensitization.

#### **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

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

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.

**IARC**      No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**      No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**      No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### **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 fetal 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.

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

### Further information

#### Product:

Remarks : No data available

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### 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 daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.236 mg/l  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility.

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

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 0.02 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211  
Remarks: No toxicity at the limit of solubility.

### Ecotoxicology Assessment

Acute aquatic toxicity : No toxicity at the limit of solubility.

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

### Persistence and degradability

#### Components:

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

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301D  
Remarks: Not classified due to data which are conclusive although insufficient for classification.

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

### 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

#### **Mobility in soil**

No data available

#### **Other adverse effects**

#### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

---

## SECTION 13. DISPOSAL CONSIDERATIONS

### **Disposal methods**

Waste from residues : 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.  
Do not burn, or use a cutting torch on, the empty drum.  
Dispose of in accordance with local regulations.

---

## SECTION 14. TRANSPORT INFORMATION

### **International Regulations**

#### **UNRTDG**

UN number : UN 3103  
Proper shipping name : ORGANIC PEROXIDE TYPE C, LIQUID  
(2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : 5.2

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

### IATA-DGR

UN/ID No. : UN 3103  
Proper shipping name : Organic peroxide type C, liquid  
(2,5-Dimethyl-2,5-di-(tert-butylperoxy)-hexane)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : Organic Peroxides, Keep Away From Heat  
Packing instruction (cargo : 570  
aircraft)  
Packing instruction (passen- : 570  
ger aircraft)

### IMDG-Code

UN number : UN 3103  
Proper shipping name : ORGANIC PEROXIDE TYPE C, LIQUID  
(2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE)  
Class : 5.2  
Packing group : Not assigned by regulation  
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.

### Domestic regulation

#### 49 CFR

UN/ID/NA number : UN 3103  
Proper shipping name : Organic peroxide type C, liquid  
(2,5-Dimethyl-2,5-di-(tert-butylperoxy)hexane, > 90-100%)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : ORGANIC PEROXIDE  
ERG Code : 146  
Marine pollutant : no

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

---

## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know

#### CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

# SAFETY DATA SHEET

## DHBP



Version 1.2      Revision Date: 08/02/2019      SDS Number: 600000000007      Date of last issue: 04/30/2018  
Date of first issue: 05/31/2017

---

### **SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Flammable (gases, aerosols, liquids, or solids)  
Organic peroxides  
Skin corrosion or irritation

**SARA 313** : 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.

### **Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40 CFR 60.489).

### **Clean Water Act**

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

### **California Prop. 65**

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

### **The ingredients 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

# SAFETY DATA SHEET

## DHBP



Version	Revision Date:	SDS Number:	Date of last issue: 04/30/2018
1.2	08/02/2019	600000000007	Date of first issue: 05/31/2017

---

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

---

## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification.  
These safety instructions also apply to empty packaging which may still contain product residues.

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

# SAFETY DATA SHEET

## DHBP



Version	Revision Date:	SDS Number:	Date of last issue: 04/30/2018
1.2	08/02/2019	600000000007	Date of first issue: 05/31/2017

---

Revision Date : 08/02/2019

The information provided in this Material 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.

US / Z8