We create chemistry

# Safety data sheet



## 1. Identification

### Product identifier

## Dihydrorosan®

Chemical name: Tetrahydro-2-isobutyl-4-methyl-2H-pyrane
CAS Number: 13477-62-8

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

Relevant identified uses: Chemical, Chemical for detergents, Chemical for soaps, detergents and cosmetic

### Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Operating Division Nutrition and Health

Telephone: +49 621 60-48434
E-mail address: EN-global-safety-data@basf.com

### Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

## 2. Hazards Identification

### Classification of the substance or mixture

According to UN GHS criteria

Flam. Liq. 4
Skin Corr./Irrit. 2
Aquatic Acute 3
Aquatic Chronic 3

For the classifications not written out in full in this section the full text can be found in section 16.

## Label elements

Globally Harmonized System (GHS)

Pictogram:

Signal Word:
Warning

Hazard Statement:

| | |
|---|---|
| H227 | Combustible liquid. |
| H315 | Causes skin irritation. |
| H402 | Harmful to aquatic life. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary Statements (Prevention):

| | |
|---|---|
| P280 | Wear protective gloves and eye protection or face protection. |
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P273 | Avoid release to the environment. |
| P264 | Wash contaminated body parts thoroughly after handling. |

Precautionary Statements (Response):

| | |
|---|---|
| P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P332 + P313 | If skin irritation occurs: Get medical attention. |
| P362 + P364 | Take off contaminated clothing and wash it before reuse. |
| P370 + P378 | In case of fire: Use alcohol-resistant foam, carbon dioxide, dry powder or water spray for extinction. |

Precautionary Statements (Storage):

| | |
|---|---|
| P403 | Store in a well-ventilated place. |

Precautionary Statements (Disposal):

| | |
|---|---|
| P501 | Dispose of contents and container to hazardous or special waste collection point. |

## Other hazards

According to UN GHS criteria

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

## 3. Composition/Information on Ingredients

### Substances

Chemical nature

Tetrahydro-2-isobutyl-4-methyl-2H-pyran
CAS Number: 13477-62-8
EC-Number: 236-770-1

Hazardous ingredients (GHS)
According to UN GHS criteria

Tetrahydro-2-isobutyl-4-methyl-2H-pyran

| | |
|---|---|
| Content (W/W): >= 75 % - <= 100 % | Flam. Liq. 4 |
| CAS Number: 13477-62-8 | Skin Corr./Irrit. 2 |
| EC-Number: 236-770-1 | Aquatic Acute 3 |
| | Aquatic Chronic 3 |
| | H227, H315, H402, H412 |

3,4-Dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-benzopyran-6-ol

| | |
|---|---|
| Content (W/W): > 0 % - < 0,1 % | Skin Sens. 1B |
| CAS Number: 10191-41-0 | H317 |
| EC-Number: 233-466-0 | |

For the classifications not written out in full in this section the full text can be found in section 16.

### Mixtures

Not applicable

## 4. First-Aid Measures

### Description of first aid measures

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

### Most important symptoms and effects, both acute and delayed
Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

### Indication of any immediate medical attention and special treatment needed
Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

## 5. Fire-Fighting Measures

### Extinguishing media
Suitable extinguishing media:
water spray, dry powder, alcohol-resistant foam, carbon dioxide

Unsuitable extinguishing media for safety reasons:
water jet

### Special hazards arising from the substance or mixture
harmful vapours, carbon oxides
The substances/groups of substances mentioned can be released in case of fire. Combustible Liquid

### Advice for fire-fighters
Special protective equipment:
Wear a self-contained breathing apparatus.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. Cool endangered containers with water-spray.

## 6. Accidental Release Measures

### Personal precautions, protective equipment and emergency procedures
Use personal protective clothing. Information regarding personal protective measures, see section 8. Ensure adequate ventilation. Do not breathe vapour/spray. Avoid contact with the skin, eyes and clothing.

### Environmental precautions
Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

### Methods and material for containment and cleaning up
For large amounts: Dike spillage. Cover with blanket of foam (alcohol-resistant foam). Pump off product.
For residues: Contain with absorbent material (e.g. sand, silica gel, acid binder, general purpose binder, sawdust).
Dispose of absorbed material in accordance with regulations.

## 7. Handling and Storage

### Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Wear suitable protective clothing and eye/face protection. Avoid contact with the skin, eyes and clothing. Keep container tightly sealed. This product may cause irritations; wash your hands after every contact.

Protection against fire and explosion:
Take precautionary measures against static discharges. Avoid all sources of ignition: heat, sparks, open flame.

### Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place.

### Specific end use(s)

For the relevant identified use(s) listed in Section 1 the advice mentioned in this section 7 is to be observed.

## 8. Exposure Controls/Personal Protection

### Control parameters

Components with occupational exposure limits

No substance specific occupational exposure limits known.

### Exposure controls

Personal protective equipment

Respiratory protection:
Respiratory protection in case of vapour/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Hand protection:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.
Manufacturer's directions for use should be observed because of great diversity of types.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is recommended. Avoid contact with skin. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

## 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

| | | |
|---|---|---|
| Form: | liquid | |
| Colour: | colourless | |
| Odour: | flowery | |
| Odour threshold: | < 100 ppm | |
| pH value: | 5,1 - 5,3<br>(0,13 g/l, 20 °C) | (OECD Guideline 105) |
| Melting point: | < -130 °C<br>(1.013,25 hPa) | (OECD Guideline 102) |
| glass transition temperature: | -120 °C<br>(1.013,25 hPa) | (OECD Guideline 102) |
| Boiling point: | 181,9 °C<br>(1.013,25 hPa) | (measured) |
| Flash point: | 62 °C | (Directive 92/69/EEC, A.9, closed cup) |
| Evaporation rate: | Value can be approximated from Henry's Law Constant or vapor pressure. | |
| Flammability: | Combustible liquid. | (derived from flash point) |
| Lower explosion limit: | 0,6 %(V)<br>For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point. | |
| Upper explosion limit: | For liquids not relevant for classification and labelling. | |
| Ignition temperature: | 225 °C | (Directive 92/69/EEC, A.15) |
| Vapour pressure: | 1,1 hPa<br>(20 °C) | (OECD Guideline 104) |
| | 1,5 hPa<br>(25 °C) | (OECD Guideline 104) |
| | 7,2 hPa<br>(50 °C) | (OECD Guideline 104) |
| Density: | 0,8388 g/cm3<br>(20 °C)<br>Literature data. | |
| Relative density: | 0,8388<br>(20 °C)<br>Literature data. | |
| Relative vapour density (air): | > 1<br>(20 °C)<br>Heavier than air. | (calculated) |

| | | |
|---|---|---|
| Solubility in water: | 0,13 g/l<br>(20 °C, pH 5,1 - 5,3) | (OECD Guideline 105) |
| Solubility (qualitative) solvent(s): | Ethanol<br>soluble | |
| Partitioning coefficient n-octanol/water (log Kow): | 4,4 - 5,2<br>(25 °C; pH value: 5,3) | (OECD Guideline 117) |
| Self ignition: | Based on its structural properties the product is not classified as self-igniting. | Test type: Spontaneous self-ignition at room-temperature. |
| Thermal decomposition: | approx. 460 °C (DSC (DIN 51007)) | |
| Viscosity, dynamic: | No data available. | |
| Viscosity, kinematic: | No data available. | |
| Explosion hazard: | Based on the chemical structure there is no indication of explosive properties. | |
| Fire promoting properties: | Based on its structural properties the product is not classified as oxidizing. | |

### Other information

| | | |
|---|---|---|
| Self heating ability: | not applicable, the product is a liquid | |
| Adsorption/water - soil: | KOC: 722,7; log KOC: 2,86 | (calculated) |
| Surface tension: | Based on chemical structure, surface activity is not to be expected. | |
| Grain size distribution: | The substance / product is marketed or used in a non solid or granular form. | |

## 10. Stability and Reactivity

### Reactivity
No hazardous reactions if stored and handled as prescribed/indicated.

| | | |
|---|---|---|
| Corrosion to metals: | Corrosive effects to metal are not anticipated. | |
| Formation of flammable gases: | Remarks: | Forms no flammable gases in the presence of water. |

### Chemical stability
The product is stable if stored and handled as prescribed/indicated.

### Possibility of hazardous reactions
Evolution of flammable gases/vapours.

### Conditions to avoid
Avoid all sources of ignition: heat, sparks, open flame. See SDS section 7 - Handling and storage.

### Incompatible materials

Substances to avoid:
None known during use and storage if used according to instructions.

### Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

## 11. Toxicological Information

### Information on toxicological effects

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:
LD50 rat (oral): > 5.000 mg/kg (BASF-Test)

other rat (by inhalation): 23,1 mg/l 7 h (IRT)
Inhalation-risk test (IRT): No mortality within 7 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard. The vapour was tested.

LD50 rat (dermal): > 2.000 mg/kg (BASF-Test)

Irritation

Assessment of irritating effects:
Skin contact causes irritation. Not irritating to the eyes.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (OECD Guideline 404)

Serious eye damage/irritation rabbit: non-irritant (OECD Guideline 405)

Respiratory/Skin sensitization

Assessment of sensitization:
No sensitizing effect.

Experimental/calculated data:
Human Maximization Test human: Non-sensitizing. (Human patch test)

In-vitro test In vitro assay: Non-sensitizing. (OECD Guidelines 442C/D)

Germ cell mutagenicity

Assessment of mutagenicity:
No mutagenic effect was found in various tests with bacteria and mammalian cell culture.

Experimental/calculated data:
Ames-test
negative (OECD Guideline 471)

HGPRT assay
negative (OECD Guideline 476)

Micronucleus assay
negative (OECD Guideline 487)

Carcinogenicity

Assessment of carcinogenicity:
No data available concerning carcinogenic effects.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422).

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. The results were determined in a Screening test (OECD 421/422).

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Based on available data, the classification criteria are not met.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
No substance-specific organtoxicity was observed after repeated administration to animals.

Aspiration hazard

No data available.

## 12. Ecological Information

### Toxicity

Assessment of aquatic toxicity:
Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 77,6 mg/l, Brachydanio rerio (OECD Guideline 203, semistatic)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The statement of the toxic effect relates to the analytically determined concentration.

Aquatic invertebrates:
EC50 (48 h) 33,2 mg/l, Daphnia magna (OECD Guideline 202, part 1, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The details of the toxic effect relate to the nominal concentration.

Aquatic plants:
EC50 (72 h) 79,7 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The statement of the toxic effect relates to the analytically determined concentration.

EC10 (72 h) 38,1 mg/l (growth rate), Pseudokirchneriella subcapitata (OECD Guideline 201, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The statement of the toxic effect relates to the analytically determined concentration.

Microorganisms/Effect on activated sludge:
EC20 (30 min) approx. 550 mg/l, activated sludge (OECD Guideline 209, aerobic)

EC20 (3 h) > 1.000 mg/l, activated sludge, domestic (OECD Guideline 209, static)
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish:
No data available.

Chronic toxicity to aquatic invertebrates:
No data available.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.
Study scientifically not justified.

Soil living organisms:
Study scientifically not justified.

Terrestrial plants:
Study scientifically not justified.

Other terrestrial non-mammals:
Study scientifically not justified.

## Persistence and degradability

Assessment biodegradation and elimination (H2O):
Inherently biodegradable. Under enhanced conditions

Elimination information:
18 % $CO_2$ formation relative to the theoretical value (28 d) (OECD Guideline 310) (aerobic, activated sludge, domestic, non-adapted)

75 % $CO_2$ formation relative to the theoretical value (60 d) (OECD Guideline 310) (aerobic, activated sludge, domestic, non-adapted)
Enhanced conditions: prolonged incubation

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.

### Bioaccumulative potential

Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is possible.

### Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is possible.

### Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative).

### Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

## 13. Disposal Considerations

### Waste treatment methods

Observe national and local legal requirements.

## 14. Transport Information

**Land transport**

ADR

| | |
|---|---|
| | Not classified as a dangerous good under transport regulations |
| UN number or ID number: | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user | None known |

RID

Not classified as a dangerous good under transport regulations

| | |
|---|---|
| UN number or ID number: | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user | None known |

**Inland waterway transport**

ADN

Not classified as a dangerous good under transport regulations

| | |
|---|---|
| UN number or ID number: | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user: | None known |

Transport in inland waterway vessel
Not evaluated

**Sea transport**

IMDG

Not classified as a dangerous good under transport regulations

| | |
|---|---|
| UN number or ID number: | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user | None known |

**Air transport**

IATA/ICAO

Not classified as a dangerous good under transport regulations

| | |
|---|---|
| UN number or ID number | Not applicable |
| UN proper shipping name: | Not applicable |
| Transport hazard class(es): | Not applicable |
| Packing group: | Not applicable |
| Environmental hazards: | Not applicable |
| Special precautions for user | None known |

### Maritime transport in bulk according to IMO instruments

Maritime transport in bulk is not intended.

## 15. Regulatory Information

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

## 16. Other Information

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

| | |
|---|---|
| Flam. Liq. | Flammable liquids |
| Skin Corr./Irrit. | Skin corrosion/irritation |
| Aquatic Acute | Hazardous to the aquatic environment - acute |
| Aquatic Chronic | Hazardous to the aquatic environment - chronic |
| Skin Sens. | Skin sensitization |
| H227 | Combustible liquid. |
| H315 | Causes skin irritation. |
| H402 | Harmful to aquatic life. |
| H412 | Harmful to aquatic life with long lasting effects. |
| H317 | May cause an allergic skin reaction. |

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Vertical lines in the left hand margin indicate an amendment from the previous version.