

## SAFETY DATA SHEET

Creation Date 02-Apr-2009

Revision Date 13-Oct-2023

Revision Number 6

### 1. Identification

**Product Name** Decahydronaphthalene

**Cat No. :** D0-100; D0-500; O2126-500

**CAS No** 91-17-8  
**Synonyms** Decalin; Perhydronaphthalene (cis and trans Mixture/Reagent; Laboratory)

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.

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

##### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

##### **Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                                  |              |
|--------------------------------------------------|--------------|
| Flammable liquids                                | Category 3   |
| Acute Inhalation Toxicity - Vapors               | Category 3   |
| Skin Corrosion/Irritation                        | Category 1 C |
| Serious Eye Damage/Eye Irritation                | Category 1   |
| Specific target organ toxicity (single exposure) | Category 3   |
| Target Organs - Respiratory system.              |              |
| Aspiration Toxicity                              | Category 1   |

#### Label Elements

##### **Signal Word**

Danger

##### **Hazard Statements**

Flammable liquid and vapor

May be fatal if swallowed and enters airways  
Causes severe skin burns and eye damage  
May cause respiratory irritation  
Toxic if inhaled



### Precautionary Statements

#### Prevention

Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapors/spray  
Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

#### Response

Immediately call a POISON CENTER or doctor/physician

#### Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

#### Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
Wash contaminated clothing before reuse

#### Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

#### Ingestion

Do NOT induce vomiting  
Rinse mouth

#### Fire

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

#### Storage

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

#### Disposal

Dispose of contents/container to an approved waste disposal plant

#### Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects  
May form explosive peroxides

## 3. Composition/Information on Ingredients

| Component            | CAS No  | Weight % |
|----------------------|---------|----------|
| Decahydronaphthalene | 91-17-8 | >95      |

## 4. First-aid measures

|                                            |                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General Advice</b>                      | Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.                                                                                                                                                                                                                                                                                    |
| <b>Eye Contact</b>                         | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.                                                                                                                                                                                                                                                    |
| <b>Skin Contact</b>                        | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.                                                                                                                                                                                                                                                                          |
| <b>Inhalation</b>                          | If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Remove to fresh air. Immediate medical attention is required. Risk of serious damage to the lungs (by aspiration).  |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.                                                                                                                                                                                                                                               |
| <b>Most important symptoms and effects</b> | Causes burns by all exposure routes. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                                                                                                                                                                                                                                                                |

## 5. Fire-fighting measures

|                                         |                                                                                                                     |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Suitable Extinguishing Media</b>     | Water mist may be used to cool closed containers. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. |
| <b>Unsuitable Extinguishing Media</b>   | No information available                                                                                            |
| <b>Flash Point</b>                      | 58 °C / 136.4 °F                                                                                                    |
| <b>Method -</b>                         | No information available                                                                                            |
| <b>Autoignition Temperature</b>         | 250 °C / 482 °F                                                                                                     |
| <b>Explosion Limits</b>                 |                                                                                                                     |
| <b>Upper</b>                            | 4.9 vol %                                                                                                           |
| <b>Lower</b>                            | 0.7 vol %                                                                                                           |
| <b>Sensitivity to Mechanical Impact</b> | No information available                                                                                            |
| <b>Sensitivity to Static Discharge</b>  | No information available                                                                                            |

### Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes. Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Do not allow run-off from fire-fighting to enter drains or water courses.

### Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

### NFPA

**Health**  
3

**Flammability**  
2

**Instability**  
1

**Physical hazards**  
N/A

## 6. Accidental release measures

|                                             |                                                                                                                                                                                                                                                      |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal Precautions</b>                 | Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Remove all sources of ignition. Take precautionary measures against static discharges. |
| <b>Environmental Precautions</b>            | Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.          |
| <b>Methods for Containment and Clean Up</b> | Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.                                                                        |

## 7. Handling and storage

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b> | Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Take precautionary measures against static discharges.                                                                                                                                                                                                                                                                                                       |
| <b>Storage.</b> | Keep containers tightly closed in a dry, cool and well-ventilated place. Keep under nitrogen. Keep away from open flames, hot surfaces and sources of ignition. Flammables area. May form explosive peroxides. Containers should be dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Keep away from heat, sparks and flame. Corrosives area. Store under an inert atmosphere. Protect from moisture. Incompatible Materials. Strong oxidizing agents. |

## 8. Exposure controls / personal protection

|                                             |                                                                                                                                                                                                                                                       |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><u>Exposure Guidelines</u></b>           | This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.                                                                                                          |
| <b>Engineering Measures</b>                 | Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. |
| <b><u>Personal Protective Equipment</u></b> |                                                                                                                                                                                                                                                       |
| <b>Eye/face Protection</b>                  | Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.                                                                           |
| <b>Skin and body protection</b>             | Wear appropriate protective gloves and clothing to prevent skin exposure.                                                                                                                                                                             |
| <b>Respiratory Protection</b>               | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.     |
| <b>Recommended Filter type:</b>             | Organic gases and vapours filter. Type A. Brown. conforming to EN14387.                                                                                                                                                                               |
| <b>Hygiene Measures</b>                     | Handle in accordance with good industrial hygiene and safety practice.                                                                                                                                                                                |

## 9. Physical and chemical properties

|                       |                       |
|-----------------------|-----------------------|
| <b>Physical State</b> | Liquid                |
| <b>Appearance</b>     | Colorless             |
| <b>Odor</b>           | Petroleum distillates |

|                                        |                              |
|----------------------------------------|------------------------------|
| Odor Threshold                         | No information available     |
| pH                                     | 7                            |
| Melting Point/Range                    | -31 °C / -23.8 °F            |
| Boiling Point/Range                    | 187 °C / 368.6 °F @ 760 mmHg |
| Flash Point                            | 58 °C / 136.4 °F             |
| Evaporation Rate                       | No information available     |
| Flammability (solid,gas)               | Not applicable               |
| Flammability or explosive limits       |                              |
| Upper                                  | 4.9 vol %                    |
| Lower                                  | 0.7 vol %                    |
| Vapor Pressure                         | 1.3 mbar @ 22 °C             |
| Vapor Density                          | 4.8                          |
| Specific Gravity                       | 0.882                        |
| Solubility                             | insoluble                    |
| Partition coefficient; n-octanol/water | No data available            |
| Autoignition Temperature               | 250 °C / 482 °F              |
| Decomposition Temperature              | No information available     |
| Viscosity                              | 3 mPa s at 20 °C             |
| Molecular Formula                      | C10 H18                      |
| Molecular Weight                       | 138.25                       |

## 10. Stability and reactivity

|                                  |                                                                                                                                                                              |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reactive Hazard                  | Yes                                                                                                                                                                          |
| Stability                        | May form explosive peroxides. Hygroscopic. Air sensitive.                                                                                                                    |
| Conditions to Avoid              | Incompatible products. Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Exposure to air. Exposure to moisture. Exposure to moist air or water. |
| Incompatible Materials           | Strong oxidizing agents                                                                                                                                                      |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )                                                                                                                      |
| Hazardous Polymerization         | Hazardous polymerization does not occur.                                                                                                                                     |
| Hazardous Reactions              | None under normal processing.                                                                                                                                                |

## 11. Toxicological information

### Acute Toxicity

#### Product Information

#### Component Information

| Component            | LD50 Oral                 | LD50 Dermal                  | LC50 Inhalation              |
|----------------------|---------------------------|------------------------------|------------------------------|
| Decahydronaphthalene | LD50 = 4170 mg/kg ( Rat ) | LD50 = 5900 mg/kg ( Rabbit ) | LC50 = 4.08 mg/L ( Rat ) 4 h |

**Toxicologically Synergistic Products** No information available

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

|                 |                                                                                          |
|-----------------|------------------------------------------------------------------------------------------|
| Irritation      | Causes burns by all exposure routes                                                      |
| Sensitization   | No information available                                                                 |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component            | CAS No  | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|----------------------|---------|------------|------------|------------|------------|------------|
| Decahydronaphthalene | 91-17-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** Not mutagenic in AMES Test

|                                                   |                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reproductive Effects</b>                       | No information available.                                                                                                                                                                                                                                                                                                                             |
| <b>Developmental Effects</b>                      | No information available.                                                                                                                                                                                                                                                                                                                             |
| <b>Teratogenicity</b>                             | No information available.                                                                                                                                                                                                                                                                                                                             |
| <b>STOT - single exposure</b>                     | Respiratory system                                                                                                                                                                                                                                                                                                                                    |
| <b>STOT - repeated exposure</b>                   | None known                                                                                                                                                                                                                                                                                                                                            |
| <b>Aspiration hazard</b>                          | No information available                                                                                                                                                                                                                                                                                                                              |
| <b>Symptoms / effects, both acute and delayed</b> | Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting:<br>Product is a corrosive material. Use of gastric lavage or emesis is contraindicated.<br>Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| <b>Endocrine Disruptor Information</b>            | No information available                                                                                                                                                                                                                                                                                                                              |
| <b>Other Adverse Effects</b>                      | Tumorigenic effects have been reported in experimental animals. The toxicological properties have not been fully investigated.                                                                                                                                                                                                                        |

## 12. Ecological information

### Ecotoxicity

The product contains following substances which are hazardous for the environment. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

| Component            | Freshwater Algae                              | Freshwater Fish                          | Microtox   | Water Flea                                                                           |
|----------------------|-----------------------------------------------|------------------------------------------|------------|--------------------------------------------------------------------------------------|
| Decahydronaphthalene | EC50: > 2.2 mg/l<br>(Scenedesmus subspicatus) | LC50: 1.84 mg/L/48h<br>(Oryzias latipes) | Not listed | EC50: 0.28 mg/L/48h<br>(Daphnia magna)<br>EC50: 0.037 mg/l/96h<br>(Mysidopsis Bahia) |

|                                      |                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Persistence and Degradability</b> | May persist                                                                                                                                 |
| <b>Bioaccumulation/ Accumulation</b> | No information available.                                                                                                                   |
| <b>Mobility</b>                      | Will likely be mobile in the environment due to its water solubility. Is not likely mobile in the environment due its low water solubility. |

| Component            | log Pow |
|----------------------|---------|
| Decahydronaphthalene | 4.79    |

## 13. Disposal considerations

|                               |                                                                                                                                                                                                                                                                 |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste Disposal Methods</b> | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 14. Transport information

### DOT

|                             |                      |
|-----------------------------|----------------------|
| <b>UN-No</b>                | UN1147               |
| <b>Proper Shipping Name</b> | DECAHYDRONAPHTHALENE |
| <b>Hazard Class</b>         | 3                    |
| <b>Packing Group</b>        | III                  |

### TDG

|                             |                      |
|-----------------------------|----------------------|
| <b>UN-No</b>                | UN1147               |
| <b>Proper Shipping Name</b> | DECAHYDRONAPHTHALENE |
| <b>Hazard Class</b>         | 3                    |
| <b>Packing Group</b>        | III                  |

### IATA

**UN-No** UN1147  
**Proper Shipping Name** DECAHYDRONAPHTHALENE  
**Hazard Class** 3  
**Packing Group** III

**IMDG/IMO**

**UN-No** UN1147  
**Proper Shipping Name** DECAHYDRONAPHTHALENE  
**Hazard Class** 3  
**Packing Group** III

## 15. Regulatory information

**United States of America Inventory**

| Component            | CAS No  | TSCA | TSCA Inventory notification -<br>Active-Inactive | TSCA - EPA Regulatory<br>Flags |
|----------------------|---------|------|--------------------------------------------------|--------------------------------|
| Decahydronaphthalene | 91-17-8 | X    | ACTIVE                                           | -                              |

**Legend:**

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

**International Inventories**

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component            | CAS No  | DSL | NDL | EINECS    | PICCS | ENCS | ISHL | AICS | IECSC | KECL     |
|----------------------|---------|-----|-----|-----------|-------|------|------|------|-------|----------|
| Decahydronaphthalene | 91-17-8 | X   | -   | 202-046-9 | X     | X    | X    | X    | X     | KE-02852 |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

**U.S. Federal Regulations**

**SARA 313** Not applicable

**SARA 311/312 Hazard Categories** See section 2 for more information

**CWA (Clean Water Act)** Not applicable

**Clean Air Act** Not applicable

**OSHA** - Occupational Safety and Health Administration Not applicable

**CERCLA** Not applicable

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

| Component            | Massachusetts | New Jersey | Pennsylvania | Illinois | Rhode Island |
|----------------------|---------------|------------|--------------|----------|--------------|
| Decahydronaphthalene | X             | X          | X            | -        | -            |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade Moderate risk, Grade 2

Authorisation/Restrictions according to EU REACH Not applicable

| Component            | CAS No  | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|----------------------|---------|---------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Decahydronaphthalene | 91-17-8 | -                                                                   | -                                                                             | -                                                                                                     |

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

| Component            | CAS No  | OECD HPV       | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|----------------------|---------|----------------|------------------------------|---------------------------|--------------------------------------------|
| Decahydronaphthalene | 91-17-8 | Not applicable | Not applicable               | Not applicable            | Not applicable                             |

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

| Component            | CAS No  | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|----------------------|---------|-------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------|------------------------------------|
| Decahydronaphthalene | 91-17-8 | Not applicable                                                                            | Not applicable                                                                           | Not applicable             | Not applicable                     |

**16. Other information**

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date** 02-Apr-2009

**Revision Date** 13-Oct-2023

**Print Date** 13-Oct-2023

**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

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 SDS**