

# SAFETY DATA SHEET

MARINE HYDRAULIC OIL 100



## Section 1. Identification

**GHS product identifier** : MARINE HYDRAULIC OIL 100  
**Product code** : MARINEHO100  
**Other means of identification** : Not available.  
**Product type** : Liquid.

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

| Identified uses      |        |
|----------------------|--------|
| Not available.       |        |
| Uses advised against | Reason |
| Not available.       |        |

**Supplier's details** : Royal Purple, Inc.  
1 Royal Purple Lane  
Porter, Texas 77365 USA  
Phone:281-354-8600 Emergency Phone:281-354-8600

**Emergency telephone number (with hours of operation)** : 24 hr. CHEMTREC 1-800-424-9300 / International 1-703-527-3887

## Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : AQUATIC HAZARD (ACUTE) - Category 3  
AQUATIC HAZARD (LONG-TERM) - Category 3  
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2%  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 7.7%

### GHS label elements

**Signal word** : No signal word.  
**Hazard statements** : Harmful to aquatic life with long lasting effects.

### Precautionary statements

**Prevention** : Avoid release to the environment.  
**Response** : Not applicable.  
**Storage** : Not applicable.  
**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise classified** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.

| Ingredient name                                                        | %               | CAS number |
|------------------------------------------------------------------------|-----------------|------------|
| 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich | ≥1 - <3         | 68515-49-1 |
| 2,6-di-tert-butylphenol                                                | ≥0.3 - <1       | 128-39-2   |
| hydrogen sulphide                                                      | ≥0.001 - <0.006 | 7783-06-4  |

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

## Section 4. First aid measures

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 6. Accidental release measures

- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name   | Exposure limits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| hydrogen sulphide | <p><b>ACGIH TLV (United States, 4/2014).</b><br/>TWA: 1 ppm 8 hours.<br/>STEL: 5 ppm 15 minutes.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b><br/>TWA: 10 ppm 8 hours.<br/>TWA: 14 mg/m<sup>3</sup> 8 hours.<br/>STEL: 15 ppm 15 minutes.<br/>STEL: 21 mg/m<sup>3</sup> 15 minutes.</p> <p><b>OSHA PEL Z2 (United States, 2/2013).</b><br/>CEIL: 20 ppm<br/>AMP: 50 ppm 10 minutes.</p> <p><b>NIOSH REL (United States, 10/2013).</b><br/>CEIL: 10 ppm 10 minutes.<br/>CEIL: 15 mg/m<sup>3</sup> 10 minutes.</p> |

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: >100°C (>212°F)
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : Not available.
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): 1 cm<sup>2</sup>/s (100 cSt)

## Section 10. Stability and reactivity

- Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/ingredient name                                                | Result                | Species | Dose                  | Exposure |
|------------------------------------------------------------------------|-----------------------|---------|-----------------------|----------|
| 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich | LD50 Dermal           | Rabbit  | 16000 mg/kg           | -        |
| 2,6-di-tert-butylphenol                                                | LD50 Oral             | Rat     | >60000 mg/kg          | -        |
|                                                                        | LD50 Dermal           | Rabbit  | >10 g/kg              | -        |
| hydrogen sulphide                                                      | LD50 Oral             | Rat     | 1320 mg/kg            | -        |
|                                                                        | LC50 Inhalation Gas.  | Rat     | 444 ppm               | 4 hours  |
|                                                                        | LC50 Inhalation Vapor | Rat     | 700 mg/m <sup>3</sup> | 4 hours  |

#### Irritation/Corrosion

| Product/ingredient name                                                | Result                   | Species | Score | Exposure        | Observation |
|------------------------------------------------------------------------|--------------------------|---------|-------|-----------------|-------------|
| 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich | Eyes - Mild irritant     | Rabbit  | -     | 0.1 Milliliters | -           |
| 2,6-di-tert-butylphenol                                                | Skin - Moderate irritant | Rat     | -     | 0.5 Milliliters | -           |

#### Sensitization

Not available.

#### Mutagenicity

Not available.

#### Carcinogenicity

Not available.

#### Reproductive toxicity

Not available.

#### Teratogenicity

Not available.

#### Specific target organ toxicity (single exposure)

| Name                    | Category   | Route of exposure | Target organs                |
|-------------------------|------------|-------------------|------------------------------|
| 2,6-di-tert-butylphenol | Category 3 | Not applicable.   | Respiratory tract irritation |

#### Specific target organ toxicity (repeated exposure)

Not available.

## Section 11. Toxicological information

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No specific data.  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

#### Long term exposure

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** : No known significant effects or critical hazards.  
**Carcinogenicity** : No known significant effects or critical hazards.  
**Mutagenicity** : No known significant effects or critical hazards.  
**Teratogenicity** : No known significant effects or critical hazards.  
**Developmental effects** : No known significant effects or critical hazards.  
**Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Not available.

## Section 12. Ecological information

### Toxicity

| Product/ingredient name | Result                         | Species                                         | Exposure |
|-------------------------|--------------------------------|-------------------------------------------------|----------|
| hydrogen sulphide       | Acute EC50 62 µg/l Fresh water | Crustaceans - Gammarus pseudolimnaeus           | 2 days   |
|                         | Acute LC50 2 µg/l Fresh water  | Fish - Coregonus clupeaformis -<br>Yolk-sac fry | 96 hours |



## Section 12. Ecological information

### Persistence and degradability

Not available.

### Bioaccumulative potential

| Product/ingredient name                                                | LogP <sub>ow</sub> | BCF | Potential |
|------------------------------------------------------------------------|--------------------|-----|-----------|
| 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich | 8.8                | 0.1 | low       |
| 2,6-di-tert-butylphenol                                                | 4.5                | -   | high      |

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                  | DOT Classification | TDG Classification | IMDG           | IATA           |
|------------------|--------------------|--------------------|----------------|----------------|
| <b>UN number</b> | Not regulated.     | Not regulated.     | Not regulated. | Not regulated. |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 8(a) PAIR:** diphenylamine  
**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
 At least one component is not listed.  
**Clean Water Act (CWA) 311:** hydrogen sulphide

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed



## Section 15. Regulatory information

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

| Name              | %               | EHS  | SARA 302 TPQ |           | SARA 304 RQ |           |
|-------------------|-----------------|------|--------------|-----------|-------------|-----------|
|                   |                 |      | (lbs)        | (gallons) | (lbs)       | (gallons) |
| hydrogen sulphide | ≥0.001 - <0.006 | Yes. | 500          | -         | 100         | -         |

**SARA 304 RQ** : 7936791.4 lbs / 3603303.3 kg [1062616.7 gal / 4022441.7 L]

### SARA 311/312

**Classification** : Not applicable.

#### Composition/information on ingredients

| Name                                                                   | %               | Fire hazard | Sudden release of pressure | Reactive | Immediate (acute) health hazard | Delayed (chronic) health hazard |
|------------------------------------------------------------------------|-----------------|-------------|----------------------------|----------|---------------------------------|---------------------------------|
| 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich | ≥1 - <3         | No.         | No.                        | No.      | Yes.                            | No.                             |
| 2,6-di-tert-butylphenol                                                | ≥0.3 - <1       | No.         | No.                        | No.      | Yes.                            | No.                             |
| hydrogen sulphide                                                      | ≥0.001 - <0.006 | Yes.        | Yes.                       | No.      | Yes.                            | No.                             |

### State regulations

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

**New Jersey** : The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED); MINERAL OIL (UNTREATED and MILDLY TREATED)

**Pennsylvania** : None of the components are listed.

### California Prop. 65

**WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

| Ingredient name                                                        | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|------------------------------------------------------------------------|--------|--------------|---------------------------|---------------------------------|
| 1,2-Benzenedicarboxylic acid, di-C9-11-branched alkyl esters, C10-rich | No.    | Yes.         | No.                       | Yes.                            |

### International lists

#### National inventory

**Australia** : Not determined.

**Canada** : Not determined.

**China** : Not determined.

**Europe** : Not determined.

**Japan** : At least one component is not listed.

**Malaysia** : Not determined.

**New Zealand** : Not determined.

## Section 15. Regulatory information

|                          |                   |
|--------------------------|-------------------|
| <b>Philippines</b>       | : Not determined. |
| <b>Republic of Korea</b> | : Not determined. |
| <b>Taiwan</b>            | : Not determined. |

## Section 16. Other information

### Procedure used to derive the classification

| Classification                                   | Justification                            |
|--------------------------------------------------|------------------------------------------|
| Aquatic Acute 3, H402<br>Aquatic Chronic 3, H412 | Calculation method<br>Calculation method |

### History

**Date of issue/Date of revision** : 05/04/2015

**Version** : 1

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 UN = United Nations

☑ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.