SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier

Product code: PO138
Product Name: POLYSORBATE 80, NF

Other means of identification

Synonyms:
TWEEN 80
Polyoxyethylene 20 sorbitan monooleate
Polyethylene oxide sorbitan mono-oleate
Polyoxyethylene sorbitan monooleate
Polyoxyethylene sorbitan oleate
Sorbitan mono-9-octadecenoate poly(oxy-1,2-ethanediyl) derivatives
Sorethytan (20) monooleate

CAS #: 9005-65-6
RTECS #: WG2932500
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Emulsifying agent.
Uses advised against: No information available

Supplier:
Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: https://www.spectrumchemical.com

Emergency telephone number
Chemtrec 1-800-424-9300
Contact Person:
Martin LaBenz (West Coast)
Regina Wachenheim (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)
Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Not classified
Hazard not otherwise classified (HNOC)
Not Applicable

Other hazards
Not available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
<th>Trade Secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
<td>9005-65-6</td>
<td>100</td>
<td>*</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**First aid measures**

**General Advice:** Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops.

**Eye Contact:** Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** May cause eye/skin irritation.

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

### 5. FIRE-FIGHTING MEASURES

**Extinguishing Media**

**Suitable Extinguishing Media:** Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

**Unsuitable Extinguishing Media:** No information available.

**Specific hazards arising from the chemical**

**Hazardous Combustion Products:** Carbon oxides

**Specific hazards:** May be combustible at high temperatures. Container explosion may occur under fire conditions or when heated.

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**Product code:** PO138  **Product name:** POLYSORBATE 80, NF
Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

Environmental precautions No information available.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth).

Methods for cleaning up Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice: Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe vapors or spray mist. Keep away from heat and sources of ignition. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials: Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSOANL PROTECTION

Control parameters

National occupational exposure limits

U.S Occupational Exposure Limits: Not determined

United States

<table>
<thead>
<tr>
<th>Components</th>
<th>OSHA</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>AIHA WHEEL</th>
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</thead>
<tbody>
<tr>
<td>Polysorbate 80 - 9005-65-6</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

Canada

Canada Occupational Exposure Limits: Not determined

Product code: PO138  Product name: POLYSORBATE 80, NF
### Appropriate engineering controls

**Engineering measures to reduce exposure:** Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

**Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment**

- **Eye protection:** Goggles. Safety glasses with side-shields.
- **Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- **Respiratory protection:** Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.
- **Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

### 9. PHYSICAL AND CHEMICAL PROPERTIES
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor:</td>
<td>No information available</td>
</tr>
<tr>
<td>Appearance:</td>
<td>Oily</td>
</tr>
<tr>
<td>Taste:</td>
<td>No information available</td>
</tr>
<tr>
<td>Color:</td>
<td>Light yellow. Yellow. Amber.</td>
</tr>
<tr>
<td>Molecular/Formula weight:</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash point (°C):</td>
<td>&gt;149</td>
</tr>
<tr>
<td>Flashpoint (°C/°F):</td>
<td>&gt;149 °C/&gt;300 °F</td>
</tr>
<tr>
<td>Stability:</td>
<td>Stable at normal conditions</td>
</tr>
<tr>
<td>Possibility of Hazardous Reactions:</td>
<td>Hazardous polymerization does not occur</td>
</tr>
<tr>
<td>Incompatible Materials:</td>
<td>Strong oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous decomposition products:</td>
<td>Carbon oxides. When heated to decomposition it emits acrid smoke and irritating fumes.</td>
</tr>
<tr>
<td>Decomposition temperature(°C/°F):</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/range(°C/°F):</td>
<td>-20.56 °C/-5 °F</td>
</tr>
<tr>
<td>Boiling point/range(°C/°F):</td>
<td>&gt;100 °C/&gt;212 °F</td>
</tr>
<tr>
<td>Specific gravity:</td>
<td>1.06-1.10</td>
</tr>
<tr>
<td>Density (g/cm³):</td>
<td>No information available</td>
</tr>
<tr>
<td>Bulk density:</td>
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</tr>
<tr>
<td>Vapor pressure @ 20°C (kPa):</td>
<td>No information available</td>
</tr>
<tr>
<td>VOC content (g/L):</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>No information available</td>
</tr>
<tr>
<td>Miscibility:</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Freely soluble in water</td>
</tr>
<tr>
<td></td>
<td>Soluble in Methanol</td>
</tr>
<tr>
<td></td>
<td>Soluble in alcohol</td>
</tr>
<tr>
<td></td>
<td>Soluble in Toluene</td>
</tr>
<tr>
<td></td>
<td>Soluble in ethyl acetate</td>
</tr>
<tr>
<td></td>
<td>Insoluble in mineral oil</td>
</tr>
<tr>
<td></td>
<td>Soluble in cotton see oil and corn oil</td>
</tr>
<tr>
<td>Product code:</td>
<td>PO138</td>
</tr>
<tr>
<td>Product name:</td>
<td>POLYSORBATE 80, NF</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Reactivity
Reactive with oxidizing agents

Chemical stability
Stability: Stable at normal conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur


Incompatible Materials: Strong oxidizing agents.

Hazardous decomposition products: Carbon oxides. When heated to decomposition it emits acrid smoke and irritating fumes.

Other Information
Corrosivity: No information available

Special Remarks on Corrosivity: No information available
11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Skin, Ingestion, Eyes.

Acute Toxicity

Component Information

Polysorbate 80 - 9005-65-6
LD50/oral/rat = >38000 mg/kg
LD50/oral/mouse = 25000 mg/kg
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = No information available

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = >38000mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = 25000mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: May cause skin irritation.

Eye Contact: May cause eye irritation.

Inhalation
May cause irritation of respiratory tract. However, no irritation is expected to be associated with the inhalation of this material. No toxic effects are known to be associated with the inhalation of this material.
Ingestion

Health injuries are not known or expected under normal use. Not expected to be a health hazard. This material is not likely to cause irritation upon ingestion. It is classified as "relatively harmless" by ingestion and considered to be a low ingestion hazard. Ingestion of very large doses may cause abdominal spasms and diarrhea. Animal studies have shown it to cause cardiac changes, changes in behavior (altered sleep time) upon IV administration. However, no similar human data has been reported.

Aspiration hazard

No information available

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

Chronic Toxicity

Prolonged or repeated ingestion may cause hypermotility and diarrhea. Prolonged or repeated ingestion may cause weight loss.

Sensitization:

No information available

Mutagenic Effects:

May affect genetic material

Carcinogenic effects:

Not considered carcinogenic. Equivocal tumorigenic agent by Registry of Toxic Effects of Chemical Substances (RTECS) criteria.

<table>
<thead>
<tr>
<th>Components</th>
<th>ACGIH - Carcinogens</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA HCS - Carcinogens</th>
<th>Australia - Prohibited Carcinogenic Substances</th>
<th>Australia - Notifiable Carcinogenic Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Reproductive toxicity

No data is available

Reproductive Effects:

No information available

Developmental Effects:

No information available

Teratogenic Effects:

No information available

Specific Target Organ Toxicity

STOT - single exposure
No information available

STOT - repeated exposure
No information available

Target Organs:
No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects:
No data available.

Persistence and degradability:
No information available

Bioaccumulative potential:
No information available

Mobility:
No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Product code: PO138  
Product name: POLYSORBATE 80, NF
13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

14. TRANSPORT INFORMATION

DOT
- UN-No: Not regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: Not applicable
- Packing Group: None
- Marine Pollutant: No data available
- ERG No: No information available
- DOT RQ (lbs): No information available

TDG (Canada)
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available

ADR
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Packing Group: No information available
- Subsidiary Risk: No information available
- Classification Code: No information available
- Description: No information available
- CEFIC Tremcard No: No information available

IMO / IMDG
- UN-No: Not Regulated
- Proper Shipping Name: No information available
- Hazard Class: No information available
- Subsidiary Risk: No information available
- Packing Group: No information available
- Description: No information available
- IMDG Page: No information available
- Marine Pollutant: No information available
- MFAQ: No information available
- Maximum Quantity: No information available

RID
- UN-No: Not Regulated

Product code: PO138 Product name: POLYSORBATE 80, NF
14. TRANSPORT INFORMATION

Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Classification Code: No information available
Description: No information available

ICAO

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. TSCA</th>
<th>Philippines (PICCS)</th>
<th>KOREA KECL</th>
<th>Japan ENCS</th>
<th>CHINA</th>
<th>Australia (AICS)</th>
<th>EINECS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
<td>Present</td>
<td>Present</td>
<td>Present KE-25511</td>
<td>Present (8)-55</td>
<td>Present</td>
<td>Present</td>
<td>Not present</td>
</tr>
</tbody>
</table>

U.S. Regulations


Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

<table>
<thead>
<tr>
<th>Components</th>
<th>Carcinogen</th>
<th>Developmental Toxicity</th>
<th>Male Reproductive Toxicity</th>
<th>Female Reproductive Toxicity</th>
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</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
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<td>Not Listed</td>
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</table>

CERCLA/SARA

<table>
<thead>
<tr>
<th>Components</th>
<th>CERCLA - Hazardous Substances and their Reportable Quantities</th>
<th>Section 302 Extremely Hazardous Substances and TPQs</th>
<th>Section 302 Extremely Hazardous Substances and RQs</th>
<th>Section 313 - Chemical Category</th>
<th>Section 313 - Reporting de minimis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
<td>None</td>
<td>None</td>
<td>None</td>
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</table>

U.S. TSCA

Product code: PO138  Product name: POLYSORBATE 80, NF
### Components TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) TSCA 8(d) - Health and Safety Reporting

<table>
<thead>
<tr>
<th>Components</th>
<th>Polysorbate 80</th>
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<th>Not Applicable</th>
</tr>
</thead>
</table>

### Canada

**WHMIS hazard class:**
Non-controlled

**Canada Controlled Products Regulation:**
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

### Inventory

<table>
<thead>
<tr>
<th>Components</th>
<th>Canada (DSL)</th>
<th>Canada (NDSL)</th>
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<tbody>
<tr>
<td>Polysorbate 80</td>
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<table>
<thead>
<tr>
<th>Components</th>
<th>CEPA Schedule I - Toxic Substances</th>
<th>CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
<td>Not listed</td>
<td>Not listed</td>
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</table>

### EU Classification

**R-phrase(s)**
not determined

**S-phrase(s)**
none

<table>
<thead>
<tr>
<th>Components</th>
<th>Classification</th>
<th>Concentration Limits:</th>
<th>Safety Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polysorbate 80</td>
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<td>No information</td>
<td></td>
</tr>
</tbody>
</table>

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**
Not dangerous

### 16. OTHER INFORMATION

**Product code:** PO138  
**Product name:** POLYSORBATE 80, NF
Preparation Date: 2/27/2014
Revision Date: 2/27/2014
Prepared by: Sonia Owen

Disclaimer: All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Material Safety Data Sheet