1. Identification

Product identifier: TFM Bar
Other means of identification: Not available.
Recommended use: Industrial use.
Recommended restrictions: None known.

Manufacturer / Importer / Supplier / Distributor information

Manufacturer: Iofina Chemical, Inc.
Address: 1025 Mary Laidley Drive, Covington, KY 41017
United States
Telephone number: 859-356-8000

Supplier: U.S. Fish and Wildlife Service
Address: 1849 C Street NW Washington, D.C. 20240
United States
Emergency telephone number: Chemtrec (U.S.) 1-800-424-9300

Supplier: Department of Fisheries and Oceans Canada - Sea Lamprey Control Centre
Address: 1219 Queen Street Sault Ste. Marie Ontario, Canada P6A 2E5
Emergency telephone number: Canutec (Canada) 1-613-996-6666

2. Hazard(s) identification

Physical hazards: Not classified.
Health hazards:
- Acute toxicity, oral: Category 4
- Skin corrosion/irritation: Category 2
- Serious eye damage/eye irritation: Category 1
- Specific target organ toxicity, single exposure: Category 3 respiratory tract irritation

OSHA defined hazards: Not classified.

Label elements

Signal word: Danger
Hazard statement: Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation.

Precautionary statement

Prevention: Avoid breathing dust. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

Response: If swallowed: Call a poison center/doctor if you feel unwell. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

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

Disposal: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/information on ingredients

Mixtures
9003-11-6 42-46 Oxirane, 2-methyl-, Polymer With Oxirane

CAS number % Chemical name
88-30-2 22-24 3-trifluoromethyl-4-nitrophenol
68439-49-6 15-17 Alcohols, C16-18, ethoxylated
9016-45-9 15-17 Nonylphenol, ethoxylated

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation
Remove victim from source of exposure. Get medical attention for any breathing difficulty.

Skin contact
Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Get medical attention if irritation develops or persists.

Eye contact
Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion
Never give anything by mouth to a victim who is unconscious or is having convulsions. Immediately rinse mouth and drink plenty of water. Do not induce vomiting without advice from poison control center. Seek immediate medical attention.

Most important symptoms/effects, acute and delayed
Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation.

Indication of immediate medical attention and special treatment needed
Treat symptomatically.

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Carbon dioxide (CO2).

Unsuitable extinguishing media
None.

Specific hazards arising from the chemical
The product is not flammable. Will burn if involved in a fire.

Special protective equipment and precautions for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Fire-fighting equipment/instructions
Move containers from fire area if you can do it without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Avoid inhalation of dust and contact with skin and eyes. Use personal protection recommended in Section 8 of the SDS.

Methods and materials for containment and cleaning up
Shovel into dry containers. Cover and move the containers. Flush the area with water. Ventilate the area. Clean up in accordance with all applicable regulations.

7. Handling and storage

Precautions for safe handling
Avoid inhalation of dust and contact with skin and eyes. Wash at the end of each work shift and before eating, smoking and using the toilet. Change contaminated clothing. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities
Keep upright. Store in tightly closed original container in a dry, cool and well-ventilated place. Protect from direct sunlight. Store away from incompatible materials. Do not reuse containers.

8. Exposure controls/personal protection

Occupational exposure limits
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

<table>
<thead>
<tr>
<th>Components</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-trifluoromethyl-4-nitrophenol (CAS SEQ250)</td>
<td>5 mg/m3</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td></td>
<td>15 mg/m3</td>
<td>Total dust.</td>
</tr>
</tbody>
</table>

TFM Bar
916046  Version #: 01  Revision date: -  Issue date: 26-November-2013
US. OSHA Table Z-3 (29 CFR 1910.1000)

Table Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-trifluoromethyl-4-nitrophenol</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>Respirable fraction.</td>
</tr>
<tr>
<td>(CAS SEQ250)</td>
<td></td>
<td>15 mg/m³</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50 millions of particle</td>
<td>Total dust.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15 millions of particle</td>
<td>Respirable fraction.</td>
</tr>
</tbody>
</table>

US. ACGIH Threshold Limit Values

Table Components

<table>
<thead>
<tr>
<th>Components</th>
<th>Type</th>
<th>Value</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-trifluoromethyl-4-nitrophenol</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable particles.</td>
</tr>
<tr>
<td>(CAS SEQ250)</td>
<td></td>
<td>10 mg/m³</td>
<td>Inhalable particles.</td>
</tr>
</tbody>
</table>

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Use personal protective equipment as required. Keep working clothes separately.

Appropriate engineering controls

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear safety glasses with side shields.

Skin protection

Hand protection

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear suitable protective clothing.

Respiratory protection

When engineering controls are not sufficient to lower exposure levels below the applicable exposure limit, use a NIOSH approved respirator. Seek advice from local supervisor. Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards

Not applicable.

General hygiene considerations

Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance

Light brown solid.

Physical state

Solid.

Form

Solid bars.

Color

Light brown.

Odor

Metallic.

Odor threshold

Not available.

pH

3.81

Melting point/freezing point

Not available.

Initial boiling point and boiling range

Not available.

Flash point

Not available.

Evaporation rate

Not available.

Flammability (solid, gas)

Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)

Not available.

Flammability limit - upper (%)

Not available.

Explosive limit - lower (%)

Not available.
Explosive limit - upper (%) Not available.
Vapor pressure Not available.
Vapor density Not available.
Relative density 1.19
Solubility(ies) Not available.
Partition coefficient (n-octanol/water) Not available.
Auto-ignition temperature Not available.
Decomposition temperature Not available.
Viscosity Not available.

10. Stability and reactivity
Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Stable at normal conditions.
Possibility of hazardous reactions Hazardous polymerization does not occur.
Conditions to avoid None under normal conditions.
Incompatible materials Strong oxidizing agents.

11. Toxicological information
Information on likely routes of exposure
Ingestion Harmful if swallowed.
Inhalation Irritating to respiratory system.
Skin contact Causes skin irritation.
Eye contact Causes serious eye damage.
Symptoms related to the physical, chemical and toxicological characteristics Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation.

Information on toxicological effects
Acute toxicity Harmful if swallowed.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-trifluoromethyl-4-nitrophenol (CAS 88-30-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Rabbit</td>
<td>&gt; 2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Rat</td>
<td>141 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Oxirane, 2-methyl-, Polymer With Oxirane (CAS 9003-11-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LD50 Rat</td>
<td>&gt; 2000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Causes skin irritation.</td>
<td></td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Causes serious eye damage.</td>
<td></td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Not a skin sensitizer.</td>
<td></td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.</td>
<td></td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Not classified.</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>May cause respiratory irritation.</td>
<td></td>
</tr>
</tbody>
</table>

TFM Bar 916046 Version #: 01 Revision date: - Issue date: 26-November-2013
Specific target organ toxicity - repeated exposure  Not classified.

Aspiration hazard  Not classified.

Further information  No other specific acute or chronic health impact noted.

12. Ecological information

Ecotoxicity  Toxic to aquatic life. Due to the form of the product the environmental hazard is considered to be limited.

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-trifluoromethyl-4-nitrophenol (CAS 88-30-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td>LC50</td>
<td>0.6 - 37 mg/l</td>
</tr>
<tr>
<td>Rainbow trout, donaldson trout</td>
<td>Freshwater fish</td>
<td>0.842 mg/l, 96 hours</td>
</tr>
<tr>
<td>Oncorhynchus mykiss</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Invertebrate</strong></td>
<td>LC50</td>
<td>3.8 - 22.3 mg/l</td>
</tr>
<tr>
<td>Freshwater invertebrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated (CAS 9016-45-9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crustacea</strong></td>
<td>EC50</td>
<td>12.2 mg/l, 48 hours</td>
</tr>
<tr>
<td>Water flea (Daphnia magna)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td>LC50</td>
<td>1 - 1.8 mg/l, 96 hours</td>
</tr>
<tr>
<td>Bluegill (Lepomis macrochirus)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxirane, 2-methyl-, Polymer With Oxirane (CAS 9003-11-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aquatic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crustacea</strong></td>
<td>EC50</td>
<td>&gt; 100 mg/l, 48 hours</td>
</tr>
<tr>
<td>Invertebrates (Invertebrates)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td>LC50</td>
<td>&gt; 100 mg/l, 96 hours</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data is available on the degradability of this product.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobility in soil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No data available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other adverse effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Disposal considerations

Disposal instructions  This material and its container must be disposed of as hazardous waste. Dispose in accordance with all applicable regulations.

Hazardous waste code  Not regulated.

Waste from residues / unused products  Dispose of in accordance with local regulations.

Contaminated packaging  Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT  Not regulated as a hazardous material by DOT.

IATA  Not regulated as a dangerous good.

IMDG  Not regulated as a dangerous good.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code  This substance/mixture is not intended to be transported in bulk.

15. Regulatory information

US federal regulations  This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. This material is not listed on the US TSCA 8(b) Inventory, and is exempt because it is FIFRA regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)  Not regulated.


CERCLA Hazardous Substance List (40 CFR 302.4)  Not listed.
**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**
- Immediate Hazard - Yes
- Delayed Hazard - No
- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No

**SARA 302 Extremely hazardous substance**
- No

**SARA 311/312 Hazardous chemical**
- Yes

**SARA 313 (TRI reporting)**
- Not regulated.

**Other federal regulations**

- **Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
  - Not regulated.

- **Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
  - Not regulated.

- **Safe Drinking Water Act (SDWA)**
  - Not regulated.

- **Food and Drug Administration (FDA)**
  - Not regulated.

**US state regulations**
- This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.
  - **US. Massachusetts RTK - Substance List**
    - Not regulated.
  - **US. New Jersey Worker and Community Right-to-Know Act**
    - Not regulated.
  - **US. Pennsylvania RTK - Hazardous Substances**
    - Not regulated.
  - **US. Rhode Island RTK**
    - Not regulated.
  - **US. California Proposition 65**
    - US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
    - Not listed.

**International Inventories**

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>No</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information, including date of preparation or last revision**

- **Issue date**
  - 26-November-2013

- **Revision date**
  - -

- **Version #**
  - 01

**NFPA Ratings**

- 0
- 2
- 1

**References**

- EPA: AQUIRE database
- NLM: Hazardous Substances Data Base
- US. IARC Monographs on Occupational Exposures to Chemical Agents
- HSDB® - Hazardous Substances Data Bank
- IARC Monographs. Overall Evaluation of Carcinogenicity
- National Toxicology Program (NTP) Report on Carcinogens
- ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.