

**1. Identification**

|   |  |                 |
|---|--|-----------------|
| <b>Product identifier</b>                                     | <b>Metamifop</b>   |                 |
| <b>Other means of identification</b>                          |  |                 |
| <b>Item</b>   | N-13084  |                 |
| <b>CAS number</b>   | 256412-89-2  |                 |
| <b>Synonyms</b>   | PROPANAMIDE,(R)-2-[4-[(6-CHLORO-2-BENZOXAZOLYL)OXY]PHENOXY]-N-(2-FLUOROPHENYL)-N-METHYL- |                 |
| <b>Recommended use</b>  | For Laboratory Use Only  |                 |
| <b>Recommended restrictions</b>                               | None known.  |                 |
| <b>Manufacturer/Importer/Supplier/Distributor information</b> |  |                 |
| <b>Manufacturer</b>   |  |                 |
| <b>Company name</b>   | Chem Service, Inc.   |                 |
| <b>Address</b>  | 660 Tower Lane<br>West Chester, PA 19380<br>United States                                |                 |
| <b>Telephone</b>  | Toll Free  | 800-452-9994    |
|   | Direct   | 610-692-3026    |
| <b>Website</b>  | www.chemservice.com  |                 |
| <b>E-mail</b>   | info@chemservice.com   |                 |
| <b>Emergency phone number</b>                                 | Chemtrec US  | 800-424-9300    |
|   | Chemtrec outside US  | +1 703-527-3887 |

**2. Hazard(s) identification**

|                              |  |            |
|------------------------------|--|------------|
| <b>Physical hazards</b>      | Not classified.  |            |
| <b>Health hazards</b>        | Acute toxicity, inhalation                             | Category 4 |
|                              | Sensitization, skin                                    | Category 1 |
| <b>Environmental hazards</b> | Hazardous to the aquatic environment, acute hazard     | Category 1 |
|                              | Hazardous to the aquatic environment, long-term hazard | Category 1 |
| <b>OSHA defined hazards</b>  | Not classified.  |            |
| <b>Label elements</b>        |  |            |



|  |  |
|--|--|
| <b>Signal word</b>                               | Warning  |
| <b>Hazard statement</b>                          | May cause an allergic skin reaction. Harmful if inhaled. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.   |
| <b>Precautionary statement</b>                   |  |
| <b>Prevention</b>                                | Avoid breathing dust/fume. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves.  |
| <b>Response</b>                                  | If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. Specific treatment (see this label). If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. Collect spillage. |
| <b>Storage</b>                                   | Store away from incompatible materials.  |
| <b>Disposal</b>                                  | Dispose of contents/container in accordance with local/regional/national/international regulations.  |
| <b>Hazard(s) not otherwise classified (HNOC)</b> | None known.  |

Supplemental information Not applicable.

### 3. Composition/information on ingredients

#### Substances

| Chemical name | Common name and synonyms   | CAS number  | %   |
|---------------|--|-------------|-----|
| Metamifop     | PROPANAMIDE,(R)-2-[4-[(6-CHLORO-2-BENZOXAZOLYL)OXY]PHENOXY]-N-(2-FLUOROPHENYL)-N-METHYL- | 256412-89-2 | 100 |

### 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell. |
| <b>Skin contact</b>   | Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.              |
| <b>Eye contact</b>  | Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.   |
| <b>Ingestion</b>  | Rinse mouth. Get medical attention if symptoms occur.   |
| <b>Most important symptoms/effects, acute and delayed</b>                     | May cause an allergic skin reaction. Dermatitis. Rash.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.  |
| <b>General information</b>  | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.                                     |

### 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Water fog. Dry chemical powder. Carbon dioxide (CO2). Alcohol resistant foam.  |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.   |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.                        |
| <b>Fire fighting equipment/instructions</b>                          | Use water spray to cool unopened containers. Wear self contained breathing apparatus for fire fighting if necessary. |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials.                           |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards noted.  |

### 6. Accidental release measures

|  |   |
|--|---|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. Use personal protective equipment. Avoid dust formation. Avoid breathing gas. Avoid breathing mist or vapor. Avoid inhalation of dust. |
| <b>Methods and materials for containment and cleaning up</b>               | Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Collect spillage.<br><br>Large Spills: Wet down with water and dike for later disposal. Prevent product from entering drains. Following product recovery, flush area with water.<br><br>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.<br><br>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.  |
| <b>Environmental precautions</b>   | Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with skin. Avoid contact with eyes. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep container tightly closed in a dry and well-ventilated place.  |

## 8. Exposure controls/personal protection

|  |   |
|--|---|
| <b>Occupational exposure limits</b>  | This substance has no PEL, TLV, or other recommended exposure limit.  |
| <b>Biological limit values</b>   | No biological exposure limits noted for the ingredient(s).  |
| <b>Appropriate engineering controls</b>                                      | Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <b>Eye/face protection</b>   | If contact is likely, safety glasses with side shields are recommended.   |
| <b>Skin protection</b>   |   |
| <b>Hand protection</b>   | Wear appropriate chemical resistant gloves.   |
| <b>Other</b>   | Wear appropriate chemical resistant clothing.   |
| <b>Respiratory protection</b>  | In case of insufficient ventilation, wear suitable respiratory equipment.   |
| <b>Thermal hazards</b>   | Wear appropriate thermal protective clothing, when necessary.   |
| <b>General hygiene considerations</b>  | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.  |

## 9. Physical and chemical properties

|   |                |
|---|----------------|
| <b>Appearance</b>                                   |                |
| <b>Physical state</b>                               | Solid.         |
| <b>Form</b>   | Solid.         |
| <b>Color</b>  | Not available. |
| <b>Odor</b>   | Not available. |
| <b>Odor threshold</b>                               | Not available. |
| <b>pH</b>   | Not available. |
| <b>Melting point/freezing point</b>                 | Not available. |
| <b>Initial boiling point and boiling range</b>      | Not available. |
| <b>Flash point</b>                                  | Not available. |
| <b>Evaporation rate</b>                             | Not available. |
| <b>Flammability (solid, gas)</b>                    | Not available. |
| <b>Upper/lower flammability or explosive limits</b> |                |
| <b>Flammability limit - lower (%)</b>               | Not available. |
| <b>Flammability limit - upper (%)</b>               | Not available. |
| <b>Explosive limit - lower (%)</b>                  | Not available. |
| <b>Explosive limit - upper (%)</b>                  | Not available. |
| <b>Vapor pressure</b>                               | Not available. |
| <b>Vapor density</b>                                | Not available. |
| <b>Relative density</b>                             | Not available. |
| <b>Solubility(ies)</b>                              |                |
| <b>Solubility (water)</b>                           | Not available. |

|  |                |
|--|----------------|
| <b>Partition coefficient (n-octanol/water)</b> | Not available. |
| <b>Auto-ignition temperature</b>               | Not available. |
| <b>Decomposition temperature</b>               | Not available. |
| <b>Viscosity</b>                               | Not available. |
| <b>Other information</b>                       |                |
| <b>Molecular formula</b>                       | C23H18ClFN2O4  |
| <b>Molecular weight</b>                        | 440.9          |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>Incompatible materials</b>             | Strong oxidizing agents. Strong reducing agents. Strong bases. Acids.                         |
| <b>Hazardous decomposition products</b>   | No hazardous decomposition products are known.  |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Harmful if inhaled.                                      |
| <b>Skin contact</b> | May cause an allergic skin reaction.                     |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation. |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.                   |

**Symptoms related to the physical, chemical and toxicological characteristics** May cause an allergic skin reaction. Dermatitis. Rash.

### Information on toxicological effects

**Acute toxicity** Harmful if inhaled. May cause an allergic skin reaction.

| Product                     | Species | Test Results         |
|-----------------------------|---------|----------------------|
| Metamifop (CAS 256412-89-2) |         |                      |
| <b>Dermal</b>               |         |                      |
| LD50                        | Rat     | > 2000 mg/kg         |
| <b>Inhalation</b>           |         |                      |
| LC50                        | Rat     | > 2.61 mg/l, 4 hours |
| <b>Oral</b>                 |         |                      |
| LD50                        | Rat     | > 2000 mg/kg         |

\* Estimates for product may be based on additional component data not shown.

**Skin corrosion/irritation** Prolonged skin contact may cause temporary irritation.  
**Serious eye damage/eye irritation** Direct contact with eyes may cause temporary irritation.

### Respiratory or skin sensitization

|                                  |                                      |
|----------------------------------|--------------------------------------|
| <b>Respiratory sensitization</b> | Not available.                       |
| <b>Skin sensitization</b>        | May cause an allergic skin reaction. |

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

### IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

## US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects. |
| <b>Specific target organ toxicity - single exposure</b>   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.  |
| <b>Aspiration hazard</b>                                  | Not available.   |

## 12. Ecological information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

| Product                     |      | Species       | Test Results          |
|-----------------------------|------|---------------|-----------------------|
| Metamifop (CAS 256412-89-2) |      |               |                       |
| <b>Aquatic</b>              |      |               |                       |
| Algae                       | EC50 | Algae         | > 2.03 mg/l, 48 hours |
| Crustacea                   | EC50 | Daphnia       | 0.288 mg/l, 48 hours  |
| Fish                        | LC50 | Rainbow Trout | 0.307 mg/l, 96 hours  |

\* Estimates for product may be based on additional component data not shown.

|                                      |   |
|--------------------------------------|---|
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.  |
| <b>Bioaccumulative potential</b>     | No data available.  |
| <b>Mobility in soil</b>              | No data available.  |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component. |

## 13. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).   |
| <b>Contaminated packaging</b>                | Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.   |

## 14. Transport information

### DOT

|                                     |   |
|-------------------------------------|---|
| <b>UN number</b>                    | UN3077  |
| <b>UN proper shipping name</b>      | Environmentally hazardous substances, solid, n.o.s.                     |
| <b>Transport hazard class(es)</b>   |   |
| <b>Class</b>                        | 9   |
| <b>Subsidiary risk</b>              | -   |
| <b>Label(s)</b>                     | 9   |
| <b>Packing group</b>                | III   |
| <b>Special precautions for user</b> | Read safety instructions, SDS and emergency procedures before handling. |
| <b>Special provisions</b>           | 8, 146, 335, A112, B54, IB8, IP3, N20, T1, TP33                         |
| <b>Packaging exceptions</b>         | 155   |
| <b>Packaging non bulk</b>           | 213   |
| <b>Packaging bulk</b>               | 240   |

### IATA

|                                |  |
|--------------------------------|--|
| <b>UN number</b>               | UN3077   |
| <b>UN proper shipping name</b> | Environmentally hazardous substance, solid, n.o.s. |

**Transport hazard class(es)**

**Class** 9  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards** No.  
**ERG Code** 9L

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**Other information**

**Passenger and cargo aircraft** Allowed with restrictions.  
**Cargo aircraft only** Allowed with restrictions.

**IMDG**

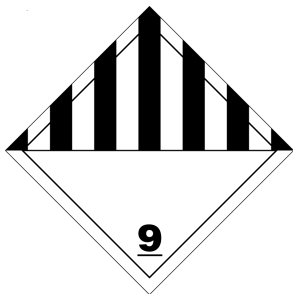
**UN number** UN3077  
**UN proper shipping name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
**Transport hazard class(es)**

**Class** 9  
**Subsidiary risk** -  
**Packing group** III  
**Environmental hazards**

**Marine pollutant** No.  
**EmS** F-A, S-F

**Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

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

**DOT; IATA; IMDG****15. Regulatory information**

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.  
 One or more components are not listed on TSCA.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

Not listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

Not regulated.

**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**

Not listed.

**SARA 311/312 Hazardous chemical** No

**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.**International Inventories**

| Country(s) or region        | Inventory name   | On inventory (yes/no)* |
|-----------------------------|--|------------------------|
| Australia                   | Australian Inventory of Chemical Substances (AICS)                     | No                     |
| Canada                      | Domestic Substances List (DSL)   | No                     |
| Canada                      | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                       | Inventory of Existing Chemical Substances in China (IECSC)             | No                     |
| Europe                      | European Inventory of Existing Commercial Chemical Substances (EINECS) | No                     |
| Europe                      | European List of Notified Chemical Substances (ELINCS)                 | No                     |
| Japan                       | Inventory of Existing and New Chemical Substances (ENCS)               | No                     |
| Korea                       | Existing Chemicals List (ECL)  | No                     |
| New Zealand                 | New Zealand Inventory  | No                     |
| Philippines                 | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | No                     |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory                          | No                     |

\*A "Yes" indicates that all components of this product comply 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**

|                      |  |
|----------------------|--|
| <b>Issue date</b>    | 10-20-2014                                     |
| <b>Revision date</b> | 08-11-2017                                     |
| <b>Version #</b>     | 02   |
| <b>NFPA ratings</b>  | Health: 2<br>Flammability: 0<br>Instability: 0 |

**Disclaimer**

The above information is believed to be correct on the date it was last revised and must not be considered all inclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. OSHA regulations require that if other hazards become evident, an upgraded SDS must be made available to the employee within three months. RESPONSIBILITY for updates lies with the employer and not with CHEM SERVICE, Inc.

Persons not specifically and properly trained should not handle this chemical or its container. This product is furnished FOR LABORATORY USE ONLY! Our products may NOT BE USED as drugs, cosmetics, agricultural or pesticide products, food additives or as household chemicals.

This Safety Data Sheet (SDS) is intended only for use with Chem Service, Inc. products and should not be relied on for use with materials from any other supplier even if the chemical name(s) on the product are identical! Whenever using an SDS for a solution or mixture the user should refer to the SDS for every component of the solution or mixture. Chem Service warrants that this SDS is based upon the most current information available to Chem Service at the time it was last revised. THIS WARRANTY IS EXCLUSIVE, AND CHEM SERVICE, INC. MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. This SDS is provided gratis and CHEM SERVICE, INC. SHALL NOT BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR CONTINGENT DAMAGES.

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This product is furnished FOR LABORATORY USE ONLY.

**Revision information**

Product and Company Identification: Product and Company Identification

Composition/information on ingredients: Component information

Fire-fighting measures: Suitable extinguishing media

Fire-fighting measures: Fire fighting equipment/instructions

Accidental release measures: Personal precautions, protective equipment and emergency procedures

Handling and storage: Precautions for safe handling

Handling and storage: Conditions for safe storage, including any incompatibilities

Physical & Chemical Properties: Multiple Properties

Stability and reactivity: Incompatible materials

Toxicological Information: Toxicological Data

GHS: Classification