

# SAFETY DATA SHEET

## Willowood OxyFlo 2EC

### Section 1. Identification

**GHS product identifier** : Willowood OxyFlo 2EC  
**Product code** : Not available.  
**Other means of identification** : Not available.  
**EPA Registration Number** : 87290-8  
**EPA Signal Word** : WARNING  
**Product type** : Liquid.

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

**Identified uses** : Herbicide.

**Supplier's details** : Willowood, LLC  
385 Interlocken Crescent Suite 240,  
Broomfield, CO 80021  
Tel: 877-679-9963  
Operations@WillowoodUSA.com

**Emergency telephone number (with hours of operation)** : CHEMTREC, U.S.: 1-800-424-9300 International: +1-703-527-3887  
24/7 Health Emergencies: Call 800-858-7378 (National Pesticide Information Center)

### 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** : FLAMMABLE LIQUIDS - Category 4  
SKIN CORROSION/IRRITATION - Category 2  
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
CARCINOGENICITY - Category 2  
TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
AQUATIC HAZARD (ACUTE) - Category 1  
AQUATIC HAZARD (LONG-TERM) - Category 1

#### GHS label elements

**Hazard pictograms** :



**Signal word** : Danger



## Section 2. Hazards identification

<b>Hazard statements</b>	: H227 - Combustible liquid. H318 - Causes serious eye damage. H315 - Causes skin irritation. H360 - May damage the unborn child. H351 - Suspected of causing cancer. H335 - May cause respiratory irritation. H410 - Very toxic to aquatic life with long lasting effects.
<b>Precautionary statements</b>	
<b>Prevention</b>	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P210 - Keep away from flames and hot surfaces. - No smoking. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P261 - Avoid breathing vapor. P264 - Wash hands thoroughly after handling.
<b>Response</b>	: P391 - Collect spillage. P308 + P313 - IF exposed or concerned: Get medical attention. P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. P302 + P352 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. P332 + P313 - If skin irritation occurs: Get medical attention. P305 + P351 + P338 + P310 - 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 or physician.
<b>Storage</b>	: P405 - Store locked up. P403 - Store in a well-ventilated place. P235 - Keep cool.
<b>Disposal</b>	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazards not otherwise classified</b>	: None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: Mixture
<b>Other means of identification</b>	: Not available.

Ingredient name	%	CAS number
Solvent Naphtha (Petroleum), Heavy Arom.	≥50 - ≤75	64742-94-5
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene	≥10 - ≤25	42874-03-3
N-methyl-2-pyrrolidone	≥10 - ≤25	872-50-4
N,N-dimethyloctanamide	≥5 - ≤10	1118-92-9
N,N-dimethyldecan-1-amide	≥5 - ≤10	14433-76-2
2-Methylpropan-1-ol	≥1 - ≤3	78-83-1
Hexan-1-ol	≥1 - ≤3	111-27-3
Naphthalene	≥0.3 - <1	91-20-3

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** : Get medical attention immediately. Call a poison center or physician. 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 20 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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** : Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations



## Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following:  
 pain or irritation  
 redness  
 blistering may occur  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 stomach pains  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

### 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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet or water-based fire extinguishers.

- Specific hazards arising from the chemical** : Combustible liquid. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic 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  
 halogenated compounds

- 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

- 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized 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. Collect spillage.

### Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. 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. See also Section 8 for additional information on hygiene measures. Remove contaminated clothing and protective equipment before entering eating areas.



## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. 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. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Solvent Naphtha (Petroleum), Heavy Arom. 2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene N-methyl-2-pyrrolidone	None. None. <b>AIHA WEEL (United States, 10/2011). Absorbed through skin.</b> TWA: 10 ppm 8 hours.
N,N-dimethyloctanamide N,N-dimethyldecan-1-amide 2-Methylpropan-1-ol	None. None. <b>ACGIH TLV (United States, 3/2017).</b> TWA: 50 ppm 8 hours. TWA: 152 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 50 ppm 10 hours. TWA: 150 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 100 ppm 8 hours. TWA: 300 mg/m <sup>3</sup> 8 hours.
Hexan-1-ol	<b>AIHA WEEL (United States, 10/2011).</b> TWA: 40 ppm 8 hours.
Naphthalene	<b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b> TWA: 10 ppm 8 hours. TWA: 52 mg/m <sup>3</sup> 8 hours. <b>NIOSH REL (United States, 10/2016).</b> TWA: 10 ppm 10 hours. TWA: 50 mg/m <sup>3</sup> 10 hours. STEL: 15 ppm 15 minutes. STEL: 75 mg/m <sup>3</sup> 15 minutes. <b>OSHA PEL (United States, 6/2016).</b> TWA: 10 ppm 8 hours. TWA: 50 mg/m <sup>3</sup> 8 hours.

### Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

#### 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.



## Section 8. Exposure controls/personal protection

- 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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

- Physical state** : Liquid.
- Color** : Amber.
- Odor** : Solvent.
- Odor threshold** : Not available.
- pH** : 4.5 to 5.5
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: 66.1°C (151°F) [Setaflash.]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1.3%  
Upper: 11.8%
- Vapor pressure** : Not available.
- Vapor density** : Not available.
- Relative density** : 1.0471
- Solubility** : Emulsifies in water.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Not available.
- Flow time (ISO 2431)** : Not available.



## 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** : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
- Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials.
- 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
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene	LD50 Dermal	Rabbit	>10 g/kg	-
N-methyl-2-pyrrolidone	LD50 Oral	Rat	5 g/kg	-
	LD50 Dermal	Rabbit	8 g/kg	-
2-Methylpropan-1-ol	LD50 Oral	Rat	3914 mg/kg	-
	LD50 Dermal	Rabbit	3400 mg/kg	-
Hexan-1-ol	LD50 Dermal	Rabbit	2330 mg/kg	-
	LD50 Oral	Rat	710 mg/kg	-
Naphthalene	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	490 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Solvent Naphtha (Petroleum), Heavy Arom.	Skin - Mild irritant	Rabbit	-	24 hours 500 µl	-
N-methyl-2-pyrrolidone	Eyes - Moderate irritant	Rabbit	-	100 mg	-
Hexan-1-ol	Skin - Mild irritant	Rabbit	-	4 hours 95 %	-
	Skin - Mild irritant	Rabbit	-	410 mg	-
Naphthalene	Skin - Mild irritant	Rabbit	-	495 mg	-

#### Sensitization

There is no data available.

#### Mutagenicity

There is no data available.

#### Carcinogenicity

##### Classification

Product/ingredient name	OSHA	IARC	NTP
Naphthalene	-	2B	Reasonably anticipated to be a human carcinogen.

#### Reproductive toxicity

There is no data available.

#### Teratogenicity

There is no data available.



## Section 11. Toxicological information

### Specific target organ toxicity (single exposure)

Name	Category	Target organs
N-methyl-2-pyrrolidone	Category 3	Respiratory tract irritation
N,N-dimethyldecan-1-amide	Category 3	Respiratory tract irritation
2-Methylpropan-1-ol	Category 3	Respiratory tract irritation and Narcotic effects

### Specific target organ toxicity (repeated exposure)

There is no data available.

### Aspiration hazard

Name	Result
Solvent Naphtha (Petroleum), Heavy Arom.	ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential acute health effects

**Eye contact** : Causes serious eye damage.  
**Inhalation** : May cause respiratory irritation.  
**Skin contact** : Causes skin irritation.  
**Ingestion** : No known significant effects or critical hazards.

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

**Eye contact** : Adverse symptoms may include the following:  
 pain  
 watering  
 redness

**Inhalation** : Adverse symptoms may include the following:  
 respiratory tract irritation  
 coughing  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
 pain or irritation  
 redness  
 blistering may occur  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
 stomach pains  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

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

#### Short term exposure

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

#### Long term exposure

## Section 11. Toxicological information

<b>Potential immediate effects</b>	: No known significant effects or critical hazards.
<b>Potential delayed effects</b>	: No known significant effects or critical hazards.
<b><u>Potential chronic health effects</u></b>	
<b>General</b>	: No known significant effects or critical hazards.
<b>Carcinogenicity</b>	: Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: May damage the unborn child.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	11799.3 mg/kg
Dermal	108790.5 mg/kg

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene	Acute EC50 0.08 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 0.29 ppb Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 80 ppb Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 200 ppb Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
N,N-dimethyldecan-1-amide	Chronic NOEC 0.02 µg/L Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Chronic NOEC 13 ppb	Daphnia - Daphnia magna	21 days
	Chronic NOEC 1.3 ppb	Fish - Pimephales promelas	33 days
	Acute EC50 5 ppm Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
2-Methylpropan-1-ol	Acute LC50 21 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute LC50 600 mg/L Marine water	Crustaceans - Artemia salina	48 hours
	Acute LC50 1030000 µg/L Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1330000 µg/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
Hexan-1-ol	Chronic NOEC 4000 µg/L Fresh water	Daphnia - Daphnia magna	21 days
	Acute LC50 97700 µg/L Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 1600 µg/L Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 2350 µg/L Marine water	Crustaceans - Palaemonetes pugio	48 hours
Naphthalene	Acute LC50 213 µg/L Fresh water	Fish - Melanotaenia fluviatilis - Larvae	96 hours
	Chronic NOEC 0.5 mg/L Marine water	Crustaceans - Uca pugnax - Adult	3 weeks
	Chronic NOEC 1.5 mg/L Fresh water	Fish - Oreochromis mossambicus	60 days

### Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Hexan-1-ol	-	-	Readily

### Bioaccumulative potential



## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Solvent Naphtha (Petroleum), Heavy Arom.	2.8 to 6.5	99 to 5780	high
2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene	4.73	-	high
N-methyl-2-pyrrolidone	-0.46	-	low
N,N-dimethyldecan-1-amide	3.44	-	low
2-Methylpropan-1-ol	1	-	low
Hexan-1-ol	1.8	-	low
Naphthalene	3.4	36.5 to 168	low

### 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 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 empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

### United States - RCRA Toxic hazardous waste "U" List


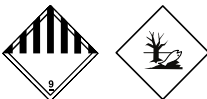
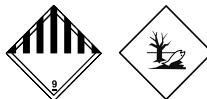
Ingredient	CAS #	Status	Reference number
2-Methylpropan-1-ol	78-83-1	Listed	U140

## Section 14. Transport information

	DOT Classification	IMDG	IATA
<b>UN number</b>	NA1993	UN3082	UN3082
<b>UN proper shipping name</b>	COMBUSTIBLE LIQUID, N.O.S. (N-methyl-2-pyrrolidone, 2-Methylpropan-1-ol)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene, N-methyl-2-pyrrolidone). Marine pollutant (2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene, N-methyl-2-pyrrolidone)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene, N-methyl-2-pyrrolidone)



## Section 14. Transport information

Transport hazard class(es)	- 	9 	9 
Packing group	III	III	III
Environmental hazards	Yes.	Yes.	Yes.

AERG : 128, 171

- DOT-RQ Details** : Naphthalene 100 lbs / 45.4 kg
- Additional information**
- DOT Classification** : Non-bulk packages (less than or equal to 119 gal) of combustible liquids, that are marine pollutants, are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by vessel.  
This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.  
**Reportable quantity** 25974 lbs / 11792.2 kg [2975 gal / 11261.8 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.  
**Emergency schedules** F-A, S-F
- IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
- 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.

## Section 15. Regulatory information

- U.S. Federal regulations** : **United States inventory (TSCA 8b):** Not determined.  
**Clean Water Act (CWA) 307:** Naphthalene  
**Clean Water Act (CWA) 311:** Naphthalene; Acetaldehyde
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed
- 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



## Section 15. Regulatory information

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : FLAMMABLE LIQUIDS - Category 4  
 SKIN CORROSION/IRRITATION - Category 2  
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 CARCINOGENICITY - Category 2  
 TOXIC TO REPRODUCTION (Unborn child) - Category 1B  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

#### Composition/information on ingredients

Name	Classification
Solvent Naphtha (Petroleum), Heavy Arom. N-methyl-2-pyrrolidone	ASPIRATION HAZARD - Category 1 FLAMMABLE LIQUIDS - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A TOXIC TO REPRODUCTION (Unborn child) - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
N,N-dimethyloctanamide	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1
N,N-dimethyldodecan-1-amide	SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
2-Methylpropan-1-ol	FLAMMABLE LIQUIDS - Category 3 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Hexan-1-ol	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4
Naphthalene	FLAMMABLE SOLIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 CARCINOGENICITY - Category 2

### SARA 313

	Product name	CAS number
<b>Form R - Reporting requirements</b>	2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene N-methyl-2-pyrrolidone Naphthalene	42874-03-3 872-50-4 91-20-3
<b>Supplier notification</b>	2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene N-methyl-2-pyrrolidone Naphthalene	42874-03-3 872-50-4 91-20-3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

- Massachusetts** : The following components are listed: N-methyl-2-pyrrolidone; 2-Methylpropan-1-ol
- New York** : The following components are listed: Naphthalene; 2-Methylpropan-1-ol
- New Jersey** : The following components are listed: 2-Chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl)benzene; N-methyl-2-pyrrolidone; Naphthalene; Hexan-1-ol; 2-Methylpropan-1-ol
- Pennsylvania** : The following components are listed: N-methyl-2-pyrrolidone; Naphthalene; Hexan-1-ol; 2-Methylpropan-1-ol



## Section 15. Regulatory information

### [California Prop. 65](#)

**⚠ WARNING:** This product can expose you to chemicals including Naphthalene, Acetaldehyde, which are known to the State of California to cause cancer, and N-methyl-2-pyrrolidone, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## Section 16. Other information

### [Procedure used to derive the classification](#)

Classification	Justification
FLAMMABLE LIQUIDS - Category 4	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method
TOXIC TO REPRODUCTION (Unborn child) - Category 1B	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

### [History](#)

**Date of issue mm/dd/yyyy** : 07/30/2018  
**Date of previous issue** : 11/15/2015  
**Version** : 2  
**Prepared by** : KMK Regulatory Services Inc.

### [Notice to reader](#)

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