SECTION 1 Chemical product and company identification

Chemical name (Chinese Name) : HANDY FLO 460
Chemical name (English name) : HANDY FLO 460
Name of company : Lucas-Milhaupt, Inc.
Address : USA, Cudahy, 5656 South Pennsylvania Ave.
Zip code : 53110
Tel. : (414) 769-6000
E-mail : LM_SDSinfo@lucasmilhaupt.com
Website : www.Lucasmilhaupt.com
Emergency number : CHEMTREC within the USA and Canada: 1-800-424-9300
CHEMTREC outside the USA and Canada +1 701-741-5970

SECTION 2 Hazards identification

Emergency overview

------------- TO BE COMPLETED -------------

GHS classification

Physical hazards : Flammable liquids, Category 2
Health hazards : Acute toxicity (oral), Category 4
Other hazards not mentioned above are Not applicable or No data is available.

Label elements

Hazard pictograms (GHS-CN) :
Signal word (GHS-CN) : Danger.
Hazard statements (GHS-CN) :
H225 - Highly flammable liquid and vapour.
H302 - Harmful if swallowed.
H319 - Causes serious eye irritation.

Precautionary statements (GHS-CN)

Prevention precautionary statements :
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting equipment.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response Precautionary Statements:
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P330 - Rinse mouth.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P370+P378 - In case of fire: Use media other than water to extinguish.

Storage precautionary statements:
P403+P235 - Store in a well-ventilated place. Keep cool.

Disposal precautionary statements:
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information:
Physical and chemical hazards: Highly flammable liquid and vapour.
Health hazard: Harmful if swallowed. Causes serious eye irritation. Eye irritation
Environmental hazards: No additional information available
Other hazards: No additional information available

SECTION 3 Composition/information on ingredients

Product form: Mixture.

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS-No.</th>
<th>Concentration(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>107-21-1</td>
<td>30</td>
</tr>
<tr>
<td>Cellulose hydroxypropyl methyl ether</td>
<td>9004-65-3</td>
<td>1.584</td>
</tr>
<tr>
<td>Petroleum distillates, hydrotreated light</td>
<td>64742-47-8</td>
<td>0.0825</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), alpha-(dinonylphenyl)-omega-hydroxy-, branched</td>
<td>68891-21-4</td>
<td>0.004875</td>
</tr>
<tr>
<td>Polyethylene glycol branched nonylphenyl ether</td>
<td>68412-54-4</td>
<td>0.002625</td>
</tr>
<tr>
<td>Ethylene oxide</td>
<td>75-21-8</td>
<td>0.0000001875</td>
</tr>
</tbody>
</table>
SECTION 4 First aid measures

Emergency

First-aid measures general: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact: Rinse skin with water/shower.
First-aid measures after eye contact: Rinse cautiously with water for several minutes.
First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

Most Important Symptoms/Effects

Eye irritation

Personal Protection in First Aid and Measures

No additional information available

Notes for the doctor

Other medical advice or treatment: Treat symptomatically

SECTION 5 Fire fighting measures

Extinguishing media

Suitable extinguishing media:
- Dry powder
- Water spray
- Foam
- Carbon dioxide

Unsuitable extinguishing media:
- Water

Special hazard

Fire hazard: Highly flammable liquid and vapour.
Hazardous decomposition products in case of fire: Toxic fumes may be released

Advice for firefighters and protective measures

Firefighting instructions: No additional information available
Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

General measures: No additional information available
Personal Precautions, Protective Equipment and Emergency Procedures: No additional information available

For non-emergency personnel

Emergency procedures: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes.

For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection."

Environmental precautions: Avoid release to the environment.

Methods and Equipment for Containment and Cleaning up

Methods for cleaning: No additional information available

For containment: No additional information available

Prevention Measures for Secondary Accidents

Prevention Measures for Secondary Accidents: No additional information available
Other information: Dispose of materials or solid residues at an authorized site.

SECTION 7 Handling and storage

Handling

Precautions for safe handling: Ensure good ventilation of the work station. Wear personal protective equipment. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Flammable vapours may accumulate in the container
Use explosion-proof equipment
Avoid contact with skin and eyes

Hygiene measures: Do not eat, drink or smoke when using this product.
Always wash hands after handling the product

Local and general ventilation: No additional information available

Storage

Storage conditions: Store in a well-ventilated place.
Keep cool.
Keep container tightly closed.

Technical measures: Ground/bond container and receiving equipment.

Material used in packaging/containers: No additional information available

SECTION 8 Exposure controls / Personal protection equipment

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Ethylene glycol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>OEL TWA</td>
<td>20 mg/m³</td>
</tr>
<tr>
<td>OEL STEL</td>
<td>40 mg/m³</td>
</tr>
</tbody>
</table>

Catalogue of Occupational Hazard Factors: Category 3 – Chemicals

ACGIH STEL (mg/m³): 10 mg/m³ (inhalable particulate matter, aerosol only)
ACGIH STEL (ppm): 50 ppm (vapor fraction)
ACGIH TWA (ppm): 25 ppm (vapor fraction)
ACGIH chemical category: Not Classifiable as a Human Carcinogen

Biological limit values
No additional information available

Monitoring methods
No additional information available

Appropriate engineering controls: Ensure good ventilation of the work station

Personal protective equipment

Environmental exposure controls: Avoid release to the environment.
Hand protection: Protective gloves
Eye protection: Safety glasses
Skin and body protection: Wear suitable protective clothing
Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment
SECTION 9 Physical and chemical properties

Physical state : Liquid
Appearance : No data available
Colour : Mixture contains one or more component(s) which have the following colour(s): clear Colourless
Odour : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: ether-like
pH : No data available
Melting point : Not applicable
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Non flammable.
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Density : No data available
Solubility : No data available
Log Pow : No data available
Lower explosive limit (LEL) : No data available
Upper explosive limit (UEL) : No data available
Radioactive : No

SECTION 10 Stability and reactivity

Reactivity : The product is non-reactive under normal conditions of use, storage and transport. Highly flammable liquid and vapour.
Chemical stability : Stable under normal conditions
Possibility of hazardous reactions : No dangerous reactions known under normal conditions of use
Conditions to avoid : None under recommended storage and handling conditions (see section 7). Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition
Incompatible materials : No additional information available
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced
Other properties: No additional information available

SECTION 11 Toxicological information

Acute toxicity
Acute toxicity (oral): Oral: Harmful if swallowed.
Acute toxicity (dermal): No data available
Acute toxicity (inhalation): No data available

<table>
<thead>
<tr>
<th>HANDY FLO 460</th>
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</thead>
<tbody>
<tr>
<td>ATE CN (oral)</td>
<td>1666.667 mg/kg bodyweight</td>
</tr>
<tr>
<td>Ethylene glycol</td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>4700 mg/kg</td>
</tr>
<tr>
<td>LD50 dermal rat</td>
<td>10600 mg/kg</td>
</tr>
<tr>
<td>ATE CN (oral)</td>
<td>500 mg/kg bodyweight</td>
</tr>
<tr>
<td>ATE CN (dermal)</td>
<td>10600 mg/kg bodyweight</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Skin corrosion/irritation: No data available

Serious eye damage/irritation
Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitisation
Respiratory or skin sensitisation: No data available

Germ cell mutagenicity
Germ cell mutagenicity: No data available

Carcinogenicity
Carcinogenicity: No data available

Reproductive toxicity
Reproductive toxicity: No data available

STOT—single exposure
STOT—single exposure: No data available

STOT—repeated exposure
STOT—repeated exposure: No data available

Aspiration hazard
Aspiration hazard : No data available

**SECTION 12 Ecological information**

**Ecotoxicity**

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

Acute aquatic toxicity : No data available
Chronic aquatic toxicity : No data available

<table>
<thead>
<tr>
<th>Ethylene glycol</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>LC50 fish 1</td>
<td>41000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss)</td>
</tr>
<tr>
<td>LC50 fish 2</td>
<td>14 - 18 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
<td>46300 mg/l (Exposure time: 48 h - Species: Daphnia magna)</td>
</tr>
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</table>

**Persistence and degradability**

No additional information available

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Ethylene glycol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-1.93</td>
</tr>
</tbody>
</table>

**Mobility in soil**

<table>
<thead>
<tr>
<th>Ethylene glycol</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
<td>-1.93</td>
</tr>
</tbody>
</table>

**Other adverse effects**

Classification procedure (Ozone) : No data available

**SECTION 13 Disposal considerations**

**Waste treatment methods** : Dispose of contents/container in accordance with licensed collector’s sorting instructions.

**Contaminated container and packaging** : No additional information available

**Additional information** : Flammable vapours may accumulate in the container.

**SECTION 14 Transport information**

<table>
<thead>
<tr>
<th>UN number</th>
<th></th>
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<tbody>
<tr>
<td>UN-No. (UN RTDG)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IMDG)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (IATA)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (ADN)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>UN-No. (RID)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
Proper Shipping Name

Proper Shipping Name (UN RTDG) : Not applicable
Proper Shipping Name (IMDG) : Not applicable
Proper Shipping Name (IATA) : Not applicable
Proper Shipping Name (ADN) : Not applicable
Proper Shipping Name (RID) : Not applicable

Transport hazard class(es)

Overland transport
Transport hazard class(es) (UN RTDG) : Not applicable

Transport by sea
Transport hazard class(es) (IMDG) : Not applicable

Air transport
Transport hazard class(es) (IATA) : Not applicable

Inland waterway transport
Transport hazard class(es) (ADN) : Not applicable

Rail transport
Transport hazard class(es) (RID) : Not applicable

Packing group

Packing group (UN RTDG) : Not applicable
Packing group (IMDG) : Not applicable
Packing group (IATA) : Not applicable
Packing group (ADN) : Not applicable
Packing group (RID) : Not applicable

Marine pollutant (IMDG)
Dangerous for the environment : No
Marine pollutant : No
Other information : No supplementary information available.

Special transport precautions

Overland transport
No data available

Transport by sea
No data available

Air transport
No data available

Inland waterway transport
No data available

Rail transport
No data available

SECTION 15 Regulatory information
SECTION 16 Other information

SDS CN (GB/T 17519-2013)

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Lucas-Milhaupt, Inc.