



## METALWORKING FLUID ADDITIVES DIVISION

### MERGAL<sup>®</sup> 399

Broad spectrum biocide for Metalworking Fluid applications

EPA Registration No. 6836-322-5383

#### Description

Water dilutable soluble oil, semi-synthetic and synthetic metalworking fluid systems are highly susceptible to the growth of microorganisms. Microbial contamination can result in bio-slime generation, gas formation, malodors and drift of pH in the fluid concentrate and the working dilution. This contamination can diminish fluid performance and system efficiency, which can increase costs, decrease tool life, reduce productivity and cause machine shut-down. The use of **Mergal<sup>®</sup>399**, a proven high quality preservative to control biodeterioration, will help maintain product functionality and increase the life of the metalworking fluid.

#### Application/ Use

For use in concentrates during manufacturing and for use in post addition applications.

#### Highlights

- Zero VOC
- Non-sensitizing
- Cost effective
- Stable over a wide pH range (3 - 10)
- Broad spectrum of activity
- Ease of incorporation
- Freeze-thaw stable
- Long-term efficacy

#### Physical Properties

The following are typical properties of Mergal 399; they are not to be considered product specifications.

Appearance: ..... Water white liquid  
 Specific Gravity, 25°C: ..... 1.19  
 pH (as is): ..... 7  
 Color (APHA): ..... 10 Max.  
 Solubility: ..... Water soluble  
 Freeze point: ..... -16°C (3°F)

#### Antimicrobial Activity

The following are examples of the broad range of organisms against which Mergal 399 has demonstrated efficacy:

Tested Bacteria	*MIC (ppm)
<i>Enterobacter aerogenes</i>	250
<i>Klebsiella pneumoniae</i>	150
<i>Proteus mirabilis</i>	300
<i>Proteus vulgaris</i>	300
<i>Pseudomonas aeruginosa</i>	450
<i>Pseudomonas fluorescens</i>	400
<i>Pseudomonas oleovorans</i>	300
<i>Serratia marcescens</i>	300
<i>Bacillus subtilis</i>	300
<i>Staphylococcus aureus</i>	250

Function/  
Activity

\*Minimum inhibitory concentration (MIC) is an indication of which microorganisms can be controlled by a preservative and the concentration at which growth of the test organism is inhibited under laboratory conditions. MIC values are expressed in parts per million (ppm). The lower the MIC value in ppm, the greater the product's effectiveness. MIC values should only be used for relative comparisons. Practical use concentrations are generally much higher and should be established through field tests and actual use.

Formulating  
Considerations

**Mergal® 399** is a liquid, water soluble organic broad spectrum preservative designed for use in both the concentrate and working dilutions of soluble oil, semi-synthetic and synthetic metalworking fluid systems which may be subject to microbial degradation.

Mergal 399, at appropriate use levels in both laboratory and field evaluations, inhibits the growth of microorganisms. Products protected with Mergal 399 can generally resist the long-term, repeated challenge of microorganisms.

When used in metalworking fluid concentrates and working dilutions at application use levels of 0.05 - 0.31%, based on the weight of the working dilution, Mergal 399 will protect against a broad range of gram positive and gram negative bacteria and other microorganisms. The level of Mergal 399 required for optimum effectiveness is dependant on the composition and end use application of your specific product formulation. Mergal 399 may be used in systems with commonly used fungicides such as Troyshield LA33, Troyshield FX40 and Troyshield FX50. Customers are encouraged to check for compatibility and stability in their formulated systems.

Mergal 399 is highly stable over a wide pH range (3-10), and at elevated temperatures.

Keep container closed. Store in dry place. Do not store at elevated temperatures. Keep from freezing. Do not reuse empty drum.

When handling, avoid breathing vapors or spray mist. Avoid contact with skin, eyes or clothing. In case of contact, immediately flush eyes or skin with large volumes of water. Get medical attention if irritation persists. Harmful if swallowed, inhaled or absorbed through the skin. See product label for Statement of Practical Treatment and storage and disposal instructions.

Regulatory  
Considerations

**Toxicity**

**Acute Oral Effects:**

LD50 (oral, male rat) – 2890 mg/kg.

**Acute Skin Effects:**

LD50 (dermal, rabbit) >2,000 mg/kg; mild irritation. This product is not a skin sensitizer.

**Acute Eye Effects:**

Mild to moderate irritation (rabbit). Reversible after 4 days.

**Acute Inhalation Effects:**

LC50 (rat, 4 hr) >2 mg/L.

**Subchronic Effects and Other Studies**

For additional information on active ingredients, contact Troy Chemical Corp.

## Environmental Effects

### Ecotoxicity

No data is available on this product; however ecotoxicological data is included on the active ingredients. For additional information contact Troy Chemical Corporation.

For solid mixture of the active ingredients

LC50 (Rainbow trout, 96 hr) – 236 mg/L.

LC50 (Bluegill sunfish, 96 hr) – 95 mg/L.

EC50 (*Daphnia magna*) – 20 mg/L.

### Environmental Fate

This product may cause adverse environmental impact. Avoid contamination of streams and sewers.

## Chemical Inventories

This product, or its components, are listed on, or are exempt from:

Country	Agency	Registration Number and Sections
United States	TSCA	116-25-6
United States	TSCA	6440-58-0
United States	EPA	6836-322-5383
Canada	DSL	116-25-6
Canada	DSL	6440-58-0
Europe	EINECS	204-132-1
Europe	EINECS	229-222-8
Australia	AICS	116-25-6
Australia	AICS	6440-58-0
Korea	ECL Serial No.	KE-03214
Korea	ECL Serial No.	KE-05-0737
Japan	ENCS/MITI#	5-6503X
Japan	ENCS/MITI#	5-3543
China	IECSC	116-25-6
China	IECSC	6440-58-0
New Zealand	NZIoC	116-25-6
New Zealand	NZIoC	6440-58-0

## Labeling

**CAUTION:** Harmful if swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid breathing vapors or spray mist. Avoid contact with skin, eyes, or clothing. Wear chemical resistant gloves when using this product. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

### EU Regulations

This product is not classified according to EU legislation.

## Handling, Storage, Health And Safety

Avoid contact with eyes, skin, or clothing. Avoid breathing vapor or mist. Wash thoroughly after handling. Keep container tightly closed. Use only with adequate ventilation. Store away from incompatible substances in a cool dry, ventilated area. Keep from freezing. Preparation of formulations with this product should be carried out in closed vessels. While formulating under these conditions, temperatures as high as 80°C (176°F) can be tolerated for a short period of time.

**Observe all Federal, State and Local regulations when storing or disposing of this substance.**

**Shelf Life:** 12 Months

## Shipping And Packaging

**Emergency Overview:** WARNING. Mergal® 399 is a water white liquid with a slight characteristic odor. May cause mild irritation. Excessive heat in excess of 90°C (194°F) will result in decomposition to formaldehyde. Avoid contamination of streams and sewers. Floors may become slippery in the event of a spill.

Mergal 399 is packaged in:

Shipping Container	Net Weight
Pail	40 lbs/18.2 kg
Drums	500 lbs/227.3 kg
2-way Totes	2500 lbs/1134 kg

## DOT, IATA, IMDG

This product does not meet the definition of any hazard class and therefore is not subject to DOT, IATA, and IMDG Regulation

For further information visit our website:  
[www.troycorp.com](http://www.troycorp.com) or call...

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