

## Safety Data Sheet

acc. to OSHA HCS (29 CFR 1910.1200) and WHMIS 2015 regulations



Printing date: 10/18/2016

Revision: 10/18/2016

### 1 Identification

- **Product identifier**
- **Trade name:** M-Flush
- **CAS Number:**  
872-50-4
- **Recommended use and restriction on use**
- **Recommended use:** Solvent cleaner for Polyurea/Polyurethane resins
- **Restrictions on use:** No relevant information available.
- **Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**  
METZGER/McGUIRE  
Mailing Address:  
PO Box 2217  
Concord, NH 03302  
Shipping Address:  
807 Route 3-A  
Bow, NH 03304  
Phone: 603-224-6122  
Toll Free: 800-223-6680  
Email: info@metzgermcguire.com
- **Emergency telephone number:**  
ChemTel Inc.  
(800)255-3924, +1 (813)248-0585

### 2 Hazard(s) identification

- **Classification of the substance or mixture**  
Flam. Liq. 4 H227 Combustible liquid.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2 H319 Causes serious eye irritation.  
Repr. 1B H360 May damage fertility or the unborn child.  
STOT SE 3 H335 May cause respiratory irritation.
- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**  

  
 GHS07 GHS08
- **Signal word:** Danger
- **Hazard statements:**  
H227 Combustible liquid.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H360 May damage fertility or the unborn child.

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H335 May cause respiratory irritation.

**Precautionary statements:**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P261 Avoid breathing mist, vapors, or spray.
- P264 Wash thoroughly after handling.
- P280 Wear protective gloves and eye protection.
- P233 Keep container tightly closed.
- P271 Use only outdoors or in a well-ventilated area.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P302+P352 IF ON SKIN: Wash with plenty of water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P370+P378 In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P405 Store locked up.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

### 3 Composition/information on ingredients

 · **Chemical characterization: Substances**

 · **CAS No. Description**

872-50-4 N-methyl-2-pyrrolidone

### 4 First-aid measures

 · **Description of first aid measures**

 · **After inhalation:**

Supply fresh air; consult doctor in case of complaints.  
Provide oxygen treatment if affected person has difficulty breathing.

 · **After skin contact:**

Immediately remove any clothing soiled by the product.  
Immediately rinse with water.  
If skin irritation continues, consult a doctor.

 · **After eye contact:**

Remove contact lenses if worn.  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

 · **After swallowing:**

Rinse out mouth and then drink plenty of water.  
Do not induce vomiting; immediately call for medical help.

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- **Most important symptoms and effects, both acute and delayed:**
  - Headache
  - Coughing
  - Breathing difficulty
  - Irritant to skin and mucous membranes.
  - Irritant to eyes.
  - May cause respiratory irritation.
  - Gastric or intestinal disorders when ingested.
  - Nausea in case of ingestion.
- **Danger:** May damage fertility or the unborn child.
- **Indication of any immediate medical attention and special treatment needed:**
  - Medical supervision for at least 48 hours.
  - If necessary oxygen respiration treatment.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray.
- **For safety reasons unsuitable extinguishing agents:** None.
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.
- **Advice for firefighters**
- **Protective equipment:**
  - Wear self-contained respiratory protective device.
  - Wear fully protective suit.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Use respiratory protective device against the effects of fumes/dust/aerosol.
  - Wear protective equipment. Keep unprotected persons away.
  - Ensure adequate ventilation.
  - Keep away from ignition sources.
- **Environmental precautions**  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Methods and material for containment and cleaning up**  
Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).  
Send for recovery or disposal in suitable receptacles.
- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

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### 7 Handling and storage

- **Handling**
- **Precautions for safe handling:**
  - Prevent formation of aerosols.
  - Avoid breathing mist, vapors, or spray.
  - Avoid splashes or spray in enclosed areas.
  - Use only in well ventilated areas.
  - Avoid contact with the eyes and skin.
  - Keep out of reach of children.
- **Information about protection against explosions and fires:** Combustible liquid.
- **Conditions for safe storage, including any incompatibilities**
- **Storage**
- **Requirements to be met by storerooms and receptacles:**
  - Protect from humidity and water.
  - Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:**
  - Store away from foodstuffs.
  - Store away from oxidizing agents.
  - Do not store together with acids.
- **Further information about storage conditions:**
  - Keep containers tightly sealed.
  - This product is hygroscopic.
- **Specific end use(s)** No relevant information available.

### 8 Exposure controls/personal protection

- **Control parameters**

- **Components with limit values that require monitoring at the workplace:**

**872-50-4 N-methyl-2-pyrrolidone**

WEEL (USA)	Long-term value: 10 ppm Skin
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EV (Canada)	Long-term value: 400 mg/m <sup>3</sup>
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- **Ingredients with biological limit values:**

**872-50-4 N-methyl-2-pyrrolidone**

BEI (USA)	100 mg/L Medium: urine Time: end of shift Parameter: 5-Hydroxy-N-methyl-2-pyrrolidone
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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
  - The usual precautionary measures for handling chemicals should be followed.
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing.

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- Wash hands before breaks and at the end of work.
- Do not inhale gases / fumes / aerosols.
- Avoid contact with the eyes and skin.
- Pregnant women should strictly avoid inhalation or ingestion.

- **Engineering controls:** No relevant information available.

- **Breathing equipment:**

- Use suitable respiratory protective device in case of insufficient ventilation.

- Use suitable respiratory protective device when aerosol or mist is formed.

- For spills, respiratory protection may be advisable.

- **Protection of hands:**



Protective gloves

- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment**

- No relevant information available.

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **Appearance:**

- **Form:** Liquid

- **Color:** Clear

- **Odor:** Amine-like

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Melting point/Melting range:** Not determined.

- **Boiling point/Boiling range:** 204 °C (399 °F)

- **Flash point:** 91 °C (196 °F) (Closed Cup)

- **Flammability (solid, gaseous):** Not applicable.

- **Auto-ignition temperature:** 245 °C (473 °F)

- **Decomposition temperature:** Not determined.

- **Danger of explosion:** Not determined.

- **Explosion limits**

- **Lower:** Not determined.

- **Upper:** Not determined.

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· <b>Oxidizing properties:</b>	Non-oxidizing.
· <b>Vapor pressure at 20 °C (68 °F):</b>	< 0.3 mmHg
· <b>Density:</b>	
<b>Relative density:</b>	1.03 g/cm <sup>3</sup> (8.595 lbs/gal)
<b>Vapor density:</b>	3.4 g/cm <sup>3</sup> (28.373 lbs/gal) (Air=1)
<b>Evaporation rate:</b>	Not determined.
· <b>Solubility in / Miscibility with Water:</b>	Fully miscible.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
· <b>Other information</b>	No relevant information available.

### 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Toxic fumes may be released if heated above the decomposition point.  
Reacts with strong acids and oxidizing agents.  
Reacts with certain metals.
- **Conditions to avoid**  
Moisture.  
Excessive heat.
- **Incompatible materials**  
Oxidizers  
Strong acids
- **Hazardous decomposition products**  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NOx)

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

**872-50-4 N-methyl-2-pyrrolidone**

Oral	LD50	4150 mg/kg (rat)
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Dermal	LD50	>5000 mg/kg (rat)
Inhalative	LC50/4h	>5.1 mg/l (rat)

- **Primary irritant effect:**

- **On the skin:** Irritant to skin and mucous membranes.
- **On the eye:** Irritating effect.
- **Sensitization:** Based on available data, the classification criteria are not met.

- **IARC (International Agency for Research on Cancer):**

Substance is not listed.

- **NTP (National Toxicology Program):**

Substance is not listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

Substance is not listed.

- **Probable route(s) of exposure:**

Ingestion.  
Inhalation.  
Eye contact.  
Skin contact.

- **Acute effects (acute toxicity, irritation and corrosivity):** Irritating to eyes, respiratory system and skin.

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Repr. 1B

- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** May damage fertility or the unborn child.
- **STOT-single exposure:** May cause respiratory irritation.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

### 12 Ecological information

- **Toxicity**

- **Aquatic toxicity** No relevant information available.
- **Persistence and degradability** Easily biodegradable
- **Bioaccumulative potential:** No relevant information available.
- **Mobility in soil:** No relevant information available.

- **Additional ecological information**

- **General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No relevant information available.

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### 13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

- **Uncleaned packagings**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport information

- **UN-Number**

- **DOT**

NA1993

 Classified as combustible under US DOT regulations. Labeling is only required for single packages  $\geq 119$  US gal / 450 L.

- **ADR, IMDG, IATA**

Not regulated.

- **UN proper shipping name**

- **DOT**

Combustible liquid, n.o.s. (N-methyl-2-pyrrolidone)

- **ADR, IMDG, IATA**

Not regulated.

- **Transport hazard class(es)**

- **DOT**



- **Class**

3 Combustible liquids

- **Label**

3

- **ADR, IMDG, IATA**

- **Class**

Not regulated.

- **Packing group**

- **DOT**

III

- **ADR, IMDG, IATA**

Not regulated.

- **Environmental hazards**

- **Marine pollutant:**

No

- **Special precautions for user**

Not applicable.

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- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**      Not applicable.

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

- **Section 302 (extremely hazardous substances):**

Substance is not listed.

- **Section 355 (extremely hazardous substances):**

Substance is not listed.

- **Section 313 (Specific toxic chemical listings):**

Substance is listed.

- **TSCA (Toxic Substances Control Act)**

Substance is listed.

- **Proposition 65 (California)**

- **Chemicals known to cause cancer:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

- **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

- **Chemicals known to cause developmental toxicity:**

Substance is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency):**

Substance is not listed.

- **IARC (International Agency for Research on Cancer):**

Substance is not listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health):**

Substance is not listed.

- **Canadian Domestic Substances List (DSL):**

Substance is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 10/18/2016 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

LDLo: Lowest Lethal Dose Observed

Flam. Liq. 4: Flammable liquids – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Repr. 1B: Reproductive toxicity – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: [www.chemtelinc.com](http://www.chemtelinc.com)