

## SECTION 1: PRODUCT AND COMPANY INFORMATION

Product Name:	ME Lube (Mechanical Etching Lube)		
Product Use Description:	Lubricating fluid, mechanical PCB etching, metal engraving.		
Company:	Think & Tinker, Ltd. 615 County Line Rd. Unit H Palmer Lake, CO 80133 USA		
Website:	www.precisebits.com		
Email:	support@precisebits.com		
Telephone:	719-488-9640	Emergency telephone:	719-358-1988

## Section 2: Hazard Identification

### Hazard Statements:

H319: May cause serious eye irritation: Category 2A

H320: Causes eye irritation, Category 2B

### Pictograms:



GHS07

### Signal Word: Warning

### Precautionary Statements:

P280 Wear eye protection / face protection. P264 Wash thoroughly after handling.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

**Other hazards** None

## Section 3: Composition / Information on Ingredients

Material	C.A.S No.	Weight Percentage
Zinc alkyl dithiophosphate	4259-15-8	>0.3 – 1.0%
Alkyl alcohol, phosphoric acid ester, mixed with alkanolamines	< 0.7%	
Mixture of alkanolamines and carboxylic acids	68411-96-1	< 0.7%
Sodium omadine	3811-73-2	< 0.1%

### Additional information:

- The specific chemical identity and/or exact percentage concentration of proprietary components is withheld as a trade secret.

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Section 4: First Aid Measures	
<b>Inhalation:</b>	Supply fresh air; consult doctor in case of complaints.
<b>Skin Contact:</b>	Generally, the product does not irritate the skin.
<b>Eye Contact:</b>	Rinse opened eye for several minutes under running water.
<b>Ingestion:</b>	If symptoms persist consult doctor.
<b>Notes to Physician:</b>	Most important symptoms and effects, both acute and delayed - No further relevant information available. Indication of any immediate medical attention and special treatment needed - No further relevant information available

Section 5: Firefighting Measures	
<b>Flash Point:</b>	356°F (180 °C) ASTM D92
<b>Suitable Extinguishing Media:</b>	CO <sub>2</sub> , extinguishing powder or water spray. Fight larger fires with water spray. Do not use water with full jet.
<b>Special Protective Equipment for Firefighters:</b>	No special measures required.
<b>Special Hazards During Firefighting:</b>	No further relevant information available
<b>Special Remarks on Fire Hazards</b>	Cool endangered receptacles with water spray.

Section 6: Accidental Release Measures	
<b>Personal Precautions:</b>	Not required.
<b>Environmental Precautions:</b>	Do not allow to enter sewers/ surface or ground water.
<b>Methods for Cleanup:</b>	Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
<b>Reference to other sections:</b>	No dangerous substances are released. See Section 7 for information on safe handling. See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

Section 7: Handling and Storage	
<b>Handling:</b>	The product has been classified and marked in accordance with directives on hazardous materials. Observe the general safety regulations when handling chemicals.
<b>Information about protection against explosions and fires:</b>	No special measures required.
<b>Storage:</b>	Store only in the original receptacle. Do not store together with oxidizing and acidic materials. Protect from heat and direct sunlight. Storage temperature between -4°F and +104°F Optimal storage temperature between -20 °C and +40 °C. Protect from frost. Duration of Storage: In closed, original container, at least 18 months. <b>Specific end use(s)</b> No further relevant information available.

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Section 8: Exposure Controls / Personal Protection	
<b>Components with limit values at the workplace:</b>	NIOSH Recommended exposure limit for Metalworking fluids: 0.5mg/m <sup>3</sup> (particulate)
<b>Personal protective equipment:</b>	N/A
<b>General protective and hygienic measures:</b>	Wash hands before breaks and at the end of work.
<b>Respiratory Protection:</b>	None required
<b>Material of gloves (recommended):</b>	Suitable protective gloves: Nitrile gloves, minimum thickness of 0.3 mm.
<b>Breakthrough time of glove material:</b>	The exact breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.
<b>Eye protection (recommended):</b>	Eye protector with side protection (framed eyeglasses) ANSI Z87.1 – 2010. Use of tight-fitting goggles
<b>Body protection (recommended):</b>	Protective work clothing

Section 9: Physical and Chemical Properties	
<b>Form:</b>	Liquid
<b>Color:</b>	Light Brown (tan)
<b>Odor:</b>	Specific type
<b>Odor threshold:</b>	Not determined
<b>pH-value:</b>	8.5 - 9.4 @ 5% in water (ASTM D1287)
<b>Melting point/Melting range:</b>	Not applicable
<b>Boiling point/Boiling range:</b>	> 482°F (> 250 °C) ASTM D86
<b>Flash point:</b>	356°F (180 °C) ASTM D92
<b>Flammability (solid, gaseous):</b>	Not applicable
<b>Decomposition temperature:</b>	Not determined
<b>Auto igniting:</b>	Material is not auto ignitable
<b>Explosion limits (@1013 mbar)</b>	
<b>Lower:</b>	Not determined
<b>Upper:</b>	Not determined
<b>Vapor pressure:</b>	Not determined
<b>Density</b>	
<b>Relative density:</b>	0.96 @ 68°F (20 °C) ASTM D1217
<b>Vapor density:</b>	Not determined.
<b>Evaporation rate:</b>	Not determined.
<b>Solubility in / Miscibility with Water:</b>	Emulsifiable.
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Viscosity</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	90 mm <sup>2</sup> /s @ 104°F (40 °C) ASTM D445
<b>VOC content:</b>	2.6 g/L (ASTM E1868-10) @ Maximum concentration 15% 17 g/l (ASTM E1868-10); Concentrate in the packaging as sold.
<b>Other information:</b>	None

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Section 10: Stability and Reactivity	
<b>Reactivity:</b>	None known if used as directed.
<b>Chemical stability:</b>	Stable under recommended storage conditions.
<b>Thermal decomposition / conditions to be avoided:</b>	No decomposition if used according to specifications
<b>Possibility of hazardous reactions:</b>	Reacts with strong acids and oxidizing agents.
<b>Conditions to avoid:</b>	No further relevant information available.
<b>Incompatible materials:</b>	No further relevant information available.
<b>Hazardous decomposition products (in case of fire or oxidation):</b>	Carbon monoxide and carbon dioxide Phosphorus compounds Nitrogen oxides (NOx) Metal oxides

Section 11: Toxicological Information	
<b>Acute toxicity:</b> LD/LC50 values that are relevant for classification	> 2000 - < 5000 mg / kg (oral, rat) > 5,100 mg/m <sup>3</sup> 4h (inhalation, rat)
<b>ATE (Acute Toxicity Estimates):</b>	Oral - LD50 - 5601 mg/kg (rat)
	Dermal - LD50 - 2213 mg/kg
	Inhalative - LC50/4 h - 900 mg/L (rat)
<b>3811-73-2 Sodium omadine:</b>	Oral LD50 1208 mg/kg (rat)
	Dermal LD50 1800 mg/kg (rabbit)
	Inhalative LC50/4 h 1.08 mg/L (rat)
<b>Primary irritant effect:</b>	on the skin: No irritant effect. on the eye: Irritating effect. Sensitization: No sensitizing effects known.
<b>Carcinogenic categories:</b>	
<b>IARC (International Agency for Research on Cancer)</b>	None of the ingredients is listed in groups 1, 2A, or 2B.
<b>NTP (National Toxicology Program)</b>	None of the ingredients is listed.
<b>OSHA-Ca (Occupational Safety &amp; Health Administration)</b>	None of the ingredients is listed.

Section 12: Ecological Information		
<b>Toxicity:</b>		
<b>Aquatic Toxicity:</b> 3811-73-2 Sodium omadine	EC50/48h	0.0088 mg/L (daphnia) (OECD 202) - after 48h
	EC50/72h	0.0012 mg/L (Algae) (OECD 201) - after 120h
	EC50/96h	0.0026 mg/L (Oncorhynchus mykiss) (OECD 203) – after 96h
<b>Persistence and degradability:</b>	Easily biodegradable	
<b>Other information:</b>	Biodegradation according to OECD 301 B; after 10 days: > 60%. The product is easily biodegradable according to the OECD 301 and 302 guidelines	
<b>Behavior in environmental systems:</b>		
<b>Bioaccumulative potential:</b>	No further relevant information available.	
<b>Mobility in soil:</b>	No further relevant information available.	
<b>General notes:</b>	Do not allow product to reach ground water, water course or sewage system.	
<b>Results of PBT and vPvB assessment:</b>	PBT: Not applicable.	
	vPvB: Not applicable.	
<b>Other adverse effects:</b>	No further relevant information available.	

Section 13: Disposal Considerations
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<b>Waste treatment methods:</b>	Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
<b>Used containers:</b>	Disposal must be made according to official regulations.

Section 14: Transport Information	
<b>DOT, ADR, IMDG, IATA</b>	Not applicable
<b>DOT, ADR</b>	Not applicable
<b>DOT, IMDG, IATA Hazard Classification:</b>	Not applicable
<b>DOT, ADR, IMDG, IATA Hazard Classification:</b>	Not applicable
<b>Environmental hazards - Marine pollutant (according to IMDG):</b>	no
Special precautions for user:	Not applicable
Transport/Additional information:	Not hazardous according to the above specifications.
IATA	IATA Dangerous Goods Regulation (DGR) 56th Edition 2015
UN "Model Regulation":	-

Section 15: Regulatory Information	
<b>SARA (Superfund Amendments and Reauthorization)</b>	
<b>Section 355 (extremely hazardous substances):</b>	None of the ingredients is listed.
<b>Section 313 (Specific toxic chemical listings):</b>	This product does not contain a chemical that are listed in Section 313.
<b>TSCA (Toxic Substances Control Act):</b>	All ingredients are listed or exempt from notification requirements.
<b>California Proposition 65:</b>	This product does not intentionally contain any chemicals known by the State of California to cause cancer and/or birth defects. Moreover, we do not routinely analyze its products for impurities which may be such chemicals.
<b>Chemicals known to cause cancer:</b>	None of the ingredients is listed.
<b>Chemicals known to cause reproductive toxicity for females:</b>	None of the ingredients is listed.
<b>Chemicals known to cause reproductive toxicity for males:</b>	None of the ingredients is listed.
<b>Chemicals known to cause developmental toxicity:</b>	None of the ingredients is listed.
<b>Carcinogenic categories:</b>	
<b>EPA (Environmental Protection Agency)</b>	None of the ingredients is listed.
<b>NIOSH-Carcinogen list</b>	None of the ingredients is listed.
<b>California SCAQMD Rule 1144:</b>	Category: Metalworking Fluid – Metal Removal – General. Recordkeeping requirement: Super Compliant. (< 50 g/L VOC @ max. use concentration)
<b>GHS label elements:</b>	GHS label elements are issued under section 2.

## Section 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.

**Department issuing SDS:** Product Stewardship

**Editor's notice:**

The above-mentioned data correspond to our present state of knowledge and experience. The safety data sheet serves as description of the products in regard to necessary safety measures. The indications should not be interpreted in any way as a guarantee of properties.

**Date of preparation / last revision** 03/02/2016

**Abbreviations and acronyms:**

ICAO: International Civil Aviation Organisation

RoHS: Restriction of Hazardous Substances

ADR: Accord européen sur le transport des marchandises dangereuses par Route (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

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

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

VOC: Volatile Organic Compounds (USA, EU)

ISO: International Organisation for Standardisation

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic chemicals

vPvB: very Persistent and very Bioaccumulative chemicals

NIOSH: National Institute for Occupational Safety and Health

OSHA: Occupational Safety and Health Administration

Eye Irrit. 2A: Serious eye damage/eye irritation, Hazard Category 2A

**\* Data compared to the previous version altered.**

The asterisk (\*) on the left side indicate the respective changes from the previous version.