

# MATERIALS SAFETY DATA SHEET

## SECTION 1 – PRODUCT IDENTIFICATION AND USE

**PRODUCT IDENTIFIER:** TECHNOVIT 4006 LIQUID  
**PRODUCT USE:** Resin for metallographic testing

11 10 64 & 11 10 66

**DISTRIBUTOR'S NAME:** MICRO STAR 2000 INC.  
**DISTRIBUTOR'S ADDRESS:** 225 Bradwick Drive, Unit 21  
Concord, Ontario  
L4K 1K7

**EMERGENCY PHONE NUMBER:** 905-660-1754

## SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

### CHEMICAL CHARACTERIZATION:

**Description:** Product based on methacrylates

Dangerous Components:			
CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate	Xi, F; R 11-37/38-43	>90%
CAS: 79-41-4 EINECS: 201-41-4	methacrylic acid	C: R 21/22-35	0-5%

**Additional Information:** For the wording of the listed risk phrases refer to section 16.

**WHMIS:** Class B, Div 3  
Class D, Div 2, Skin or eye irritation

## SECTION 3 – HAZARDS IDENTIFICATION

### Hazards Designation:

Xi Irritant  
F Highly Flammable

### Information pertaining to particular dangers for man and environment:

The product has to be labeled due to the calculation procedure of the "General Classification guideline for preparation of the EU" in the latest valid version.

R11 Highly flammable.  
R36/37/38 Irritating to eyes, respiratory system and skin.  
R43 May cause sensitization by skin contact.

### Classification System:

The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

## SECTION 4 – FIRST AID MEASURES

**INHALATION:** Supply fresh air; consult doctor in case of symptoms.  
**SKIN CONTACT:** Instantly wash with water and soap and rinse thoroughly.  
**EYE CONTACT:** Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.  
**INGESTION:** Do not induce vomiting; instantly call for medical help.

### SECTION 5 – FIRE FIGHTING MEASURES

**SUITABLE EXTINGUISHING AGENTS:** CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam. CO2, sand, extinguisher powder. Do not use water.

**FOR SAFETY REASONS UNSUITABLE EXTINGUISHING AGENTS:** Water with a full water jet.

**SPECIAL HAZARD CAUSED BY THE MATERIAL, ITS PRODUCTS OF COMBUSTION OR FLUE GASES:** Formation of toxic gases is possible during heating or in case of fire.

**PROTECTIVE EQUIPMENT:** No special measures required

### SECTION 6 – ACCIDENTAL RELEASE MEASURES

**PERSONAL PROTECTION:** Wear protective equipment.

**ENVIRONMENTAL PRECAUTIONS:** Prevent material from reaching sewage systems and/or ground water.

**CLEANING METHODS:** Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues). Do not flush with water or aqueous cleansing agents, send for recovery or disposable in suitable containers.

**ADDITIONAL INFORMATION:** See section 8 for information on personal protection equipment.  
See section 13 for information on disposal.

### SECTION 7 – HANDLING AND STORAGE

**HANDLING:** Keep containers tightly sealed  
Ensure good ventilation/exhaustion at the workplace.  
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

**EXPLOSION AND FIRES:** Keep ignition sources away – Do not smoke.  
Protect against electrostatic charges.

**STORAGE:** Store in cool location, dry conditions in well-sealed containers.  
Store cool (not above 25 C)

### SECTION 8 – ENGINEERING CONTROLS / PERSONAL PROTECTION

**Components with critical values that require monitoring at the workplace:**

**80-62-6 methyl methacrylate**

OES	Short-term value: 416 mg/m3, 100 ppm
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	Long-term value: 208 mg/m3, 50 ppm
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**79-41-4 methacrylic acid**

OES	Short-term value: 143 mg/m3, 40 ppm
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	Long-term value: 72 mg/m3, 20 ppm
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**PERSONAL PROTECTIVE EQUIPMENT**

**GENERAL PROTECTIVE AND HYGIENIC MEASURES**

Keep away from beverages and food.  
 Instantly remove away soiled and impregnated garments.  
 Wash hands during break and at the end of the work.  
 Do not inhale gases/ fumes / aerosols.  
 Avoid contact with eyes and skin.

**INHALATION PROTECTION:**

Not necessary with efficient local exhaust Use protective breathing mask (filterA).

**SKIN CONTACT:**

If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization.  
 Solvern resistant gloves.  
 The glove material has to be impermeable and resistant to the product / the substance / the preparation.  
 Selection of the glove material on consideration of the penetrating times, rates of diffusion and degradation.

**MATERIAL OF GLOVES:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is preparation of several substances the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

**PENETRATION TIME OF GLOVE MATERIAL:**

The exact break through time has not been determined by the manufacturer of the protective gloves and has to be observed.

**FOR THE PERMANENT CONTACT IN WORK AREAS WITHOUT HEIGHTENED**

**RISK OF INJURY (E.G. LABORATORY) GLOVES MADE OF THE FOLLOWING MATERIAL ARE SUITABLE:** PVA gloves

**FOR THE PERMANENT CONTACT OF MAXIMUM OF 15 GLOVES**

**MADE OF THE FOLLOWING MATERIALS ARE SUITABLE:** Fluorocarbon rubber (Viton)  
 Chloroprene rubber, CR  
 Butyl rubber, BR  
 Nitrile rubber, NBR

**EYE PROTECTION:**

Protective goggles are recommended.

**BODY PROTECTION:**

Light weight protective clothing.

**SECTION 9- PHYSICAL AND CHEMICAL PROPERTIES**

<b>General Information</b>	
Form	Fluid
Color	Colorless
Smell	Characteristic
<b>Change in condition</b>	
Melting point/Melting range	Not determined
Boiling point/Boiling range	100 °C
Flash point	10 °C
Ignition temperature	430° C
Self inflammability	Product is not self-igniting
Danger of Explosion	Product is not explosive. However, formation of explosive air/vapor mixtures is possible
<b>Critical values for explosion</b>	
Lower	2.1 Vol %
Upper	12.5 Vol %
Steam pressure at 20 C	47 hPa
Density at 20 C	0.95 g/cm3
<b>Solubility in /Miscibility with</b>	
Water	Not miscible or difficult to mix
<b>Viscosity</b>	
Dynamic at 20 C	1mPas
<b>Solvent content</b>	
Organic solvents	91.8 %
Water	0.2 %

## SECTION 10- STABILITY AND REACTIVITY

<b>CONDITIONS TO BE AVOIDED:</b>	No decomposition if used and stored according to specifications.
<b>DANGEROUS REACTIONS:</b>	No dangerous reaction known
<b>HAZARDOUS DECOMPOSITION PRODUCTS:</b>	None
<b>ADDITIONAL INFORMATION:</b>	If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

## SECTION 11 –TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY:

### PRIMARY IRRITANT EFFECTS

**SKIN:** Irritant for skin and mucous membranes  
**EYE:** Irritant effect.

**SENSITIZATION:** Sensitization possible by skin contact.

**ADDITIONAL INFORMATION:** The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:  
Irritant

## SECTION 12 –ECOLOGICAL INFORMATION

**GENERAL:** Water hazard class 1 (calculated according to VwVwS) slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

## SECTION 13- DISPOSAL CONSIDERATIONS

<b>ENVIRONMENTAL TOXICITY DATA:</b>	See regulatory information below.
<b>WASTE DISPOSAL METHOD:</b>	In accordance with all local, state, and federal regulations.
<b>CONTAINER DISPOSAL:</b>	In accordance with all local, state, and federal regulations.

## SECTION 14-TRANSPORTATION INFORMATION

### LAND TRANSPORT:

**ADR/RID-GGVS/E:** Class 3 (f1)  
**Kemler Number:** 339  
**UN-Number:** 1247  
**Packaging group:** II  
**Label:** 3  
**Designation of goods** 1247 METHYL METHACRYLATE MONOMER, STABILIZED, solution

### AIR TRANSPORT ICAO-TI and IATA-DGR:

**ICAO/IATA Class:** 3  
**UN/ID Number** 1247  
**Label** 3  
**Packaging group** II  
**Correct technical name:** METHYL METHACRYLATE MONOMER, STABILIZED, solution

**SECTION 15-REGULATORY INFORMATION**

**DESIGNATION ACCORDING TO EC GUIDELINES:** The product has been classified and labeled in accordance with EC Directives / Ordinance on Hazardous Material (GefStoffV)

**CODE LETTER AND HAZARAD DESIGNATION OF PRODUCT:** Xi Irritant  
F Highly flammable

**HAZARD-DETERMINING COMPONENTS OF LABELING:** methyl methacrylate

**RISK PHRASES:**

11 Highly flammable  
36/37/38 Irritating to eyes, respiratory system and skin.  
43 May cause sensitization by skin contact.

**SAFETY PHRASES:**

9 Keep container in a well-ventilated place  
16 Keep away from sources of ignition - No smoking  
23 Do not breath fumes.  
24 Avoid contact with skin.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
37 Wear suitable gloves.

**NATIONAL REGULATIONS****Technical instructions (air):**

Class	Share in %
Water	<1
NK	>90

**WATER HAZARD CLASS:**

Water hazard class 1 (calculation according to VwVwS): slightly hazardous for water

**SECTION 16 – OTHER INFORMATION**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**RELEVANT R-PHRASES**

10 Highly flammable  
21/22 Harmful in contact with skin and if swallowed  
35 Causes severe burn.  
37/38 Irritating to respiratory system and skin.  
43 May cause sensitization by skin contact.

**SECTION 17 – PREPARATION OF MATERIAL SAFETY DATA SHEET**

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