

MATERIALS SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER: TECHNOVIT 4004 LIQUID
PRODUCT USE: Resin for metallographic testing

11 10 08 & 11 10 09

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: 99-97-8 EINECS: 202-805-4	N,N-dimethyl-p-toluidine	T; R 23/24/25-33-52/53	<1%

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 preparations of the EU" in the latest valid version.

R11 Highly flammable.
R 37/38 Irritating to respiratory system and skin.
R 43 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 of alcohol-resistant foam. CO2, sand, extinguishing powder. Do not use water.

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

SPECIAL HAZARDS 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. Keep unprotected persons away.

ENVIRONMENTAL PRECAUTIONS: Prevent material from reaching sewage system 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.

ADDITIONAL INFORMATION: No dangerous materials released.

SECTION 7 – HANDLING AND STORAGE

HANDLING: Keep containers tightly sealed.
Keep ignition sources away – Do not smoke.
Protect against electrostatic charges.

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

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/m ³ , 100 ppm Long-term value: 208 mg/m ³ , 50 ppm
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PERSONAL PROTECTIVE EQUIPMENT:
GENERAL PROTECTIVE AND HYGIENIC MEASURES: Keep away from beverages and food.
Instantly remove any soiled and impregnated garments.
Wash hands during breaks and at the end of the work.
Avoid contact with eye and skin.

INHALATION PROTECTION Not necessary with efficient local exhaust. If exposition to vapors is possible, use breathing protection mask (filter A).

SKIN CONTACT: If skin contact cannot be avoided, protective gloves are recommended to avoid possible sensitization. Solvent resistant gloves. The glove material has to be impermeable and resistant to the product / the substance / the preparation.

MATERIAL OF GLOVE: Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. 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 a 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 to be found out 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 PERMANENT CONTACT OF MAXIMUM OF 15 GLOVES MADE OF THE FOLLOWING MATERIALS ARE SUITABLE:

- Butyl rubber, BR
- Fluorocarbon rubber (Viton)
- Nitrile rubber, NBR
- Chloroprene rubber, CR

EYE PROTECTION: Not absolutely necessary.

BODY PROTECTION: Lightweight protective clothing.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

General Information:	
Form:	Fluid
Color:	Colorless
Smell:	Characteristic
Change in Condition:	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	100 °C
Flash Point:	10 °C
Ignition Temperature:	430.0 °C
Self-inflammability:	Product is not self-igniting.
Danger of Explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
Critical values for Explosion:	
Lower:	2.1 Vol %
Upper:	12.5 Vol %
Steam Pressure at 20 °C:	47 hPa
Density at 20 °C:	0.940 g/cm ³
Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
Viscosity:	
Dynamic at 20 °C:	1 mPas
Solvent Content:	
Organic Solvents:	92.4%
Solids Content:	1.0%

SECTION 10 – STABILITY AND REACTIVITY

CONDITIONS TO BE AVOIDED:	No decomposition if used and stored according to specifications.
DANGEROUS REACTIONS:	No dangerous reactions known.
HAZARDOUS DECOMPOSITION PRODUCTS:	None
ADDITIONAL INFORMATION:	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.
EYES:	No 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 Preparation as issued in the latest version: Irritant.

SECTION 12 – ECOLOGICAL INFORMATION

General Notes:	Water hazard class 2 (calculated according to VwVwS): Hazardous for water. Do not allow product to reach ground water, water bodies or sewage system. Danger to drinking water if even small quantities leak into soil.
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SECTION 13 – DISPOSAL CONSIDERATIONS

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

SECTION 14 – TRANSPORT INFORMATION

LAND TRANSPORT:

ADR/RID-GGVSE Class: 3 (F1) Flammable liquids
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 Materials (GefStoffV).

CODE LETTER AND HAZARD DESIGNATION OF PRODUCTS:

Xi Irritant
 F Highly flammable
 methyl methacrylate

HAZARD-DETERMINING COMPONENTS OF LABELING:

RISK PHRASES

11 Highly flammable
 37/38 Irritating to 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.
 24 Avoid contact with skin.
 33 Take precautionary measures against static discharges.
 37 Wear suitable gloves.
 43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

NATIONAL REGULATIONS:

Technical Instructions (air):

Class	Share in %
I	<1
NK	>90

Water Hazard Class: Water hazard class 2 (calculated according to VwVwS): 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 contractual relationship.

RELEVANT R-PHRASES

11	Highly flammable.
23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
33	Danger of cumulative effects.
37/38	Irritating to respiratory system and skin.
43	May cause sensitization by skin contact.
52/53	Harmful to aquatic organisms may cause long-term adverse effects in the aquatic environment.

SECTION 17 – PREPARATION OF MATERIAL SAFETY DATA SHEET

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