

MATERIALS SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER: TECHNOVIT 4000 LIQUID 2 11 10 11
PRODUCT USE: Resin for metallographic testing

DISTRIBUTOR'S NAME: MICRO STAR 2000 INC. **EMERGENCY PHONE NUMBER:** 905-660-1754
DISTRIBUTOR'S ADDRESS: 225 Bradwick Drive, Unit 21
Concord, Ontario
L4K 1K7

SECTION 2 – COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL CHARACTERIZATION:

Description: Product based on methacrylates

Dangerous components;			
	hohere Methacrylsaurester	Xi; R; 36/37/38	50-75%
CAS: 80-62-6 EINECS: 201-297-1	methyl methacrylate	Xi; F; R 11-37/38-43	25-50%
CAS: 100-42-5 EINECS: 202-851-5	styrene	Xn; R; 10-20-36/38	5-10%
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.

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

SECTION 3 – HAZARDS IDENTIFICATION

HAZARD DESIGNATIONS:

Xn Harmful
F Highly flammable

INFORMATION PERTAINING TO PARTICULAR DANGERS FOR MEN 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.

R 11 Highly flammable
R 20 Harmful by inhalation
R 36/37/38 Irritating to eyes, 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- FIRS AID MEASURES

GENERAL INFORMATION: Symptoms of poisoning May even occur after several hours: therefore medical observation for at least 48 hours after the accident.

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

INDIGESTION: 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, 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 PRODUCT OF COMBUSTION OR FLUE GASES. Formation of toxic gases is possible during heating or in case of fire.

PROTECTIVE EQUIPMENT: Put on breathing apparatus.

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) Dispose of contaminated material as waste according to item 13. Do not flush with water or aqueous cleansing agents.

ADDITIONAL INFORMATION: No dangerous materials are released.

SECTION 7– HANDLING AND STORAGE

HANDLING: Keep containers tightly sealed. Ensure good ventilation/exhaustion at the workplace.

EXPLOSIONS AND FIRES: Prevent formation of aerosols. 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 AND PERSONAL PROTECTION

Additional information about design of technical systems: No further data; see item 7

Components with critical value that require monitoring at the workplace:

80-62-6 methyl methacrylate

OES ()	Short-term value: 1080 mg/m3, 250 ppm Long-term value; 430 mg/m3, 100ppm
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100-42-5 styrene

MEL ()	Shot-term value: 1080 mg/m3, 100 ppm Long-term value: 430 mg/m3, 100 ppm
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Additional information; The lists that were valid during the compilation were used as basis.

PERSONAL PROTECTIVE EQUIPMENT:

GENERAL PROTECTIVE HYGIENE 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. Do not inhale gases/fumes/aerosols.

BREATHING EQUIPMENT: Avoid contact with eyes and skin.
Not necessary with efficient local exhaust. If exposition to vapors is possible, use breathing protective mask (filter A)

PROTECTION OF HANDS: 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.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

MATERIAL OF GLOVE:
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 AREAS WITHOUT HEIGHTENED RISK OF INJURY (E.G. LABORATORY) GLOVE MADE OF THE FOLLOWING MATERIAL ARE SUITABLE: PVA gloves

FOR THE PERMANENT CONTACT OF A MAXIMUM OF 15 MINUTES GLOVE MADE OF THE FOLLOWING MATERIALS ARE SUITABLE: Butyl rubber, BR
Fluoracarbon rubber (Viton)
Nitrile rubber, NBR
Chloroprene rubber, CR

EYE PROTECTION: Protective goggles are recommended.

BODY PROTECTION: Light weight protective clothing

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

General Information	
Form	Fluid
Color	Blue
Smell	Characteristic
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range	101 °C
Flash point:	15 °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
Critical values for explosion;	
Lower	2.1 Vol%
Upper	12.5 Vol%
Steam pressure at 20 C	47 hPa
Density at 20 C	1.100 G/CM3
Solubility in/Miscibility with water	Not miscible or difficult to mix
Solvent content of Organic Solvents	40.6%

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 EFFECT:	
SKIN:	Irritant for skin and mucous membranes
EYES:	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 Harmful 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.

SECTION 13- DISPOSAL CONSIDERATION

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-TRANSPORTATION INFORMATION**LAND TRANSPORT :**

ADR/RID-GGVS/E Class: 3 (F1) Flammable liquids.
Kemler Numbers 33
UN-Number: 1866
Packaging Group 11
Label 3
Designation of goods 1866 RESIN SOLUTION, special provision 64OD

AIR TRANSPORT ICAO-TI and IATA-DGR

ICAO/IATA Class 3
UN/ID Number 1866
Label 3
Packaging group 11
Correct technical name RESIN 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 product:

Xn Harmful
 F Highly flammable

Hazard-determining components of labeling:

methyl methacrylate

Risk Phrases

11 Highly flammable
 20 Harmful by inhalation
 36/37/38 Irritating to eyes and skin
 43 May cause sensitization by skin contact

Safety phrases

9 Keep containers in a well-ventilated place.
 16 Keep away from sources of ignition-No smoking
 23 Do not breath gas/fumes/vapor/spray (appropriate wording to be specified by the manufacturer).
 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 %
I	0-5
NK	25-50

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 valid contractual relationship.

Relevant R-phrases

- 10 Flammable
- 11 Highly flammable
- 20 Harmful by inhalation
- 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
- 33 Danger of cumulative effects.
- 36/37/38 Irritating to respiratory system and skin
- 36/38 Irritating to eyes 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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REVISED: August 10, 2006

