SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER: TECHNOVIT 4000 LIQUID 1 11 10 12
PRODUCT USE: Resin for metallographic testing

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

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

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

SECTION 3 – HAZARDS IDENTIFICATION

HAZARD DESIGNATION:
Xn Harmful

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.

R 10 Flammable
R 20 Harmful by inhalation.
R 36/38 Irritating to eyes 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

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.

INGESTION: Do not induce vomiting; instantly call for medical help.

SECTION 5 – FIRE FIGHTING MEASURES

SUITABLE EXTINGUISHING AGENTS: CO_2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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: 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 systems 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.

ADDITIONAL INFORMATION: No dangerous materials are released.

SECTION 7- HANDLING AND STORAGE

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

EXPLOSION AND FIRES: Keep ignition sources away- do not smoke
Protect against electrostatic charges.

STORAGE: Store cool (not above 25 C)

SECTION 8 – ENGINEERING CONTROLS / PERSONAL PROTECTION

Components with critical value that require monitoring at the workplace:	
100-42-5 styrene	
MEL ()	Short-term value: 1080 mg/m3, 250 ppm Long-term value: 430 mg/m3, 100 ppm
80-62-6 methyl methacrylate	
OES ()	Short-term value: 416 mg/m3, 100 ppm Long-term value: 208 mg/m3, 50 ppm

ADDITIONAL INFORMATION: The lists that were valid during the compilation were used as basis.

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.
Do not inhale gases/fumes/aerosols.
Avoid contact with eyes and skin.

INHALATION PROTECTION: Not necessary with efficient local exhaust. If exposition to vapor is possible use breathe protective make (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.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the 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 form 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 COTACT IN WORK AREAS WITHOUT HEIGHTENED RISK OF INJUURY (E.G. LABORATORY) GLOVES MAKE OF THE FOLLOWING MATERIAL ARE SUITABLE: PVA gloves

FOR THE PERMANENT CONTACT OF MAXIMUM OF 15 GLOVES MADE OF THE FOLLOOWING MATERIAL ARE SUIABLE:
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	Yellow
Smell	Characteristic
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range	>100° C
Flash point:	27° 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	1.2 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	40.0%

SECTION 10- STABILITY AND REACTIVITY

CONDITIONS TO BE AVOIDED: No decomposition if used and stored according to specifications

DANGEROUS REACTION: 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:**

LD/LC50 values that are relevant for classification:		
100-42-5 styrene		
Oral Inhalative	LD 50 LC50/4 h	500 mg/kg (rat) 24 mg/l (rat)

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 quantit8ies leak into soil.

SECTION 13- DISPOSAL CONSIDERATION

ENVIRONMENTAL TOXICITY DATA: See regulatory information below.

WASTE DISPOSAL METHOD: In accordance with local, state, and federal regulations.

CONTAINER DISPOSAL: In accordance with all local, provincial, and federal regulations.

SECTION 14- TRANSPORTATION INFORMATION

LAND TRANSPORT :
ADR/RID-GGVS/E Class: 3 (F1) Flammable liquids.
Kemler Number: 30
UN-Number: 1866
Packaging Group: III
Label: 3
Designation of goods: 1866 RESIN SOLUTION, special provision 640 E

AIR TRANSPORT ICAO-TI and IATA-DGR

ICAO/IATA Class: 3
UN/ID Number: 1866
Label: 3
Packaging group: III
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

HAZARD-DETERMINING COMPONENTS OF LABELING: methyl methacrylate
styrene

RISK PHRASES
10 Flammable
20 Harmful by inhalation
36/38 Irritating to eyes and skin
43 May cause sensitization by skin contact

SAFETY PHRASES
23 Do not breathe gas.

35 This material and its container must be disposed of in a safe way.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
51 Use only in well-ventilated areas.

NATIONAL REGULATIONS
Technical instructions (air):

Class	Share in%
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
36/38	Irritating to eyes and skin
37/38	Irritating to respiratory system and skin
43	May cause sensitization by skin contact.

SECTION 17– PREPARATION OF SAFETY DATA SHEET

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