

# MATERIALS SAFETY DATA SHEET

## SECTION 1 – PRODUCT IDENTIFICATION AND USE

**PRODUCT IDENTIFIER:** TECHNOVIT 4000 SYRUP 1  
**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 / DATA ON COMPONENTS

**Chemical Characterization Description:** Product based on methacrylates

<b>DANGEROUS COMPONENTS:</b>			
CAS: 100-42-6 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.

## SECTION 3 – HAZARD 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.
- After Inhalation:** Supply fresh air; consult doctor in case of symptoms.
- After Skin Contact:** Instantly wash with water and soap and rinse thoroughly.
- After Eye Contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- After Swallowing:** Do not induce vomiting; instantly call for medical help.
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## SECTION 5 – FIRE FIGHTING MEASURES

- Suitable Extinguishing Agents:** CO<sub>2</sub>, 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 or combustion or flue gases:**  
Formation of toxic gases is possible during heating or in case of fire.
- Protective Equipment:** No dangerous materials are released.
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## SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- Measures for environmental protection:** No special measures required.
- Measures for cleaning/collecting:** Absorb with liquid-binding material (diatomite, universal binders, for small amounts tissues).  
Dispose of contaminated material as waste according item 13.
- Additional Information:** No dangerous materials are released.
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## SECTION 7 – HANDLING AND STORAGE

### HANDLING:

- Information for safe handling:** Keep containers tightly sealed.  
Ensure good ventilation/exhaustion at the workplace.
- Information about protection against explosion and fires:** Keep ignition sources away – Do not smoke.  
Protect against electrostatic charges.

### STORAGE:

- Requirements to be met by storerooms and containers:** No special requirements.
- Information about storage in one common storage facility:** Not required.
- Further information about storage conditions:** Store cool (not above 25°C).
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## SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

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

Components with critical values that require monitoring at the workplace:	
<b>100-42-5 styrene</b>	
MEL ()	Short-term value: 1080 mg/m <sup>3</sup> , 250 ppm Long-term value: 430 mg/m <sup>3</sup> , 100 ppm
<b>80-62-6 methyl methacrylate</b>	
OES ()	Short-term value: 416 mg/m <sup>3</sup> , 100 ppm Long-term value: 208 mg/m <sup>3</sup> , 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 foodstuffs, 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.

**Breathing equipment:**

Not necessary with efficient local exhaust. If exposition to vapours 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 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 a preparation of several substances, the resistance of the glove material can not 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 the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

Butyl rubber, BR  
Fluorocarbon 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  
**Colour:** 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 selfigniting  
**Danger of Explosion:** Product is not explosive. However, formation of explosive air/vapour 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/cm<sup>3</sup>  
**Solubility in / Miscibility with Water:** Not miscible or difficult to mix  
**Solvent Content:**  
**Organic Solvents:** 40.0%

## SECTION 10 – STABILITY AND REACTIVITY

**Conditions to be avoided:** No decomposition if used and stored according to specifications.

**Dangerous reactions:** No dangerous reactions known.

**Dangerous products of composition:** None

**Additional information:** If stored longer than recommended and/or above recommended temperature, product may polymerize generating heat.

## SECTION 11 – TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY:**

<b>LD/LC50 values that are relevant for classification:</b>		
<b>100-42-5 styrene</b>		
Oral	LD50	5000 mg/kg (rat)
Inhalative	LC50/4 h	24 mg/l (rat)

**Primary Irritant Effect:**

**On the skin:** Irritant for skin and mucous membranes.  
**On the eye:** Irritant effect.

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

**Additional Toxicological 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: 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.

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## SECTION 13 – DISPOSAL CONSIDERATIONS

**PRODUCT:**

**Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
Small quantities can be polymerized with the matching component(s) and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.

**European Waste Catalogue:** 11 01 98 other wastes containing dangerous substances.

**UNCLEANED PACKAGINGS:**

**Recommendation:** Disposal must be made according to official regulations.

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## SECTION 14 – TRANSPORTATION INFORMATION

**Land Transport ADR/RID and GGVS/GGVE (cross-border/domestic):**

**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 640E

**Maritime Transport IMDG/GGVSea:**

**IMDG/GGVSea Class:** 3  
**UN-Number:** 1866  
**Label:** 3  
**Packaging Group:** III  
**EMS Number:** F-E, S-E  
**Marine Pollutant:** No  
**Correct Technical Name:** RESIN SOLUTION

**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

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## 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 Us 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.

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## 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

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## SECTION 17 – PREPARATION OF MATERIAL SAFETY DATA SHEET

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PHONE NUMBER: 905-660-1754

DATE: February 15, 2008

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