

MATERIALS SAFETY DATA SHEET

SECTION 1 – PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER: MICROTEC L20 LIQUID
PRODUCT USE: Resin for metallographic testing

11 10 16 & 11 10 46

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:

Methacrylic acid methyl ester or methyl methacrylate, containing activator

Description: Product based on methacrylates

Hazardous ingredients:

Methyl Methacrylate
Concentration 60-100%
CAS number 80-62-6
Hazard symbols Xi F
R-phrases 11, 36/37/38, 43

N,N-dimethyl-p-toluidine
Concentration 1-5%
CAS number 99-97-8
Hazard symbols T
R-phrases 23/24/25,33

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

SECTION 3 – HAZARDS IDENTIFICATION

HAZARDS DESIGNATION;

Xn Harmful
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.
R20 Harmful by inhalation.
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

GENERAL INFORMATION:	Remove soiled, soaked clothing immediately. Medical treatment is necessary, if symptoms occur which are obviously caused by skin or eye contact with the product or by inhalation of its vapors.
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:	water spray jet, foam, dry powder, carbon dioxide
FOR SAFETY REASONS UNSUITABLE EXTINGUISHING AGENTS:	Full water jet
PROTECTIVE EQUIPMENT:	Use self-contained breathing apparatus. Wear full protective suit.
FIRE AND EXPLOSTION:	Keep away from sources of ignition- no smoking Take precautionary measures against static discharges. In the event of fire, cool the endangered container with water. When heated above the flash point and/or during spraying (atomizing), ignitable mixture may form in air.

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.
EXPLOSION AND FIRES:	Keep ignition sources away – do not smoke Protect against electrostatic charges.
STORAGE:	Keep only in the original container at a temperature not exceeding 30C. Full the container by approximately 90% only as oxygen (air) supply is sufficient to ensure stability. Keep out of light.

SECTION 8 – ENGINEERING CONTROLS / PERSONAL PROTECTION

Components or products of decomposition according to point 10, with limit values related to the place of work which require monitoring.

TLV (long term)- value for

CAS number		80-26-6
Methyl methacrylate	410 mg/m3	100ml/m3

PRECAUTIONARY MEASURES: Take care for adequate ventilation.
Use personal protective clothing
Keep away sources of ignition

PERSONAL PROTECTIVE EQUIPMENT GENERAL PROTECTIVE MEASURES:

Do not inhale vapors.
Avoid contact with eyes and skin

HYGIENE MEASURES:

Store work clothing separately ,
Remove soiled or soaked clothing immediately.
Follow the usual good standards of occupational hygiene.

RESPIRATORY PROTECTION:

Breathing apparatus in case of high concentration.
Short term, filter appliance, filter A

PROTECTION OF HANDS:

Rubber gloves

EYE PROTECTION:

Protective goggles are recommended

BODY PROTECTION:

Light weight protective clothing.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

Form: liquid
Color: colorless to slightly yellowish
Odour: ester-like

DATA RELAVANT TO SAFETY:

Change in physical state

Melting temperature:		-48 C
Initial boiling point:	approx.	100C
	at	1013 hPa

Flash Point:

Method DIN 51755 (Methyl methacrylate)	10 C
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Ignition temperature:

Method DIN 51794 (Methyl methacrylate)	430 C
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Lower explosion limit:

(Methyl methacrylate)	2.1%vol
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Upper explosion limit:

	12.5%vol
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Vapour pressure:

	<40 hPa
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Density

	at	20 C
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		0.95g/cm ³
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	at	20C
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Relative vapour density-related to air:

		>1
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	at	20C
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Solubility in water

	approx.	10g/l
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	at	20 C
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Solubility/qualitative

in eg. esters, ketones and chlorinated hydrocarbons:
readily soluble

pH-value	not applicable	
Viscosity dynamic	approx.	2mPas
Method Brookfield	at	23 C

SECTION 10 – TOXICOLOGICAL INFORMATION

Acute oral toxicity (LD50)

>5000 mg/kg

Species rat

Method OECD 401

Source Literature

The data mentioned above refer to the component methyl methacrylate.

Acute oral toxicity (LD50)

996 MG/KG

Species rat

The data mentioned above refer to the component N, N-dimethyl-p-toluidine

Acute inhalational toxicity (LC50)

7093 ppm

Length of exposure

4 h

Species rat

Source Literature

The data mentioned above refer to the component methyl methacrylate

Acute dermal toxicity (LD50)

>5000 mg/kg

Species rabbit

Source Literature

The data mentioned above refer to the component methyl methacrylate.

Skin irritating

Not irritating

Length of exposure

24h

Species rabbit

Method Occlusive, FDA Draize

The data mentioned above refer to the component methyl methacrylate.

Irritant effect on the eyes

Not irritating

Species rabbit eye

Method Draize

The data mentioned above refer to the component methyl methacrylate.

Sensitization

In sensitization tests on guinea pigs with and without adjuvant, both positive and negative results were found.

Source Literature

In humans various types of allergic reactions have been observed (symptoms: headache, eye irritations, skin affections).

The data mentioned above refers to the component methyl methacrylate.

Mutagenicity

Non-mutafenic

Dos./concentration

10000 ug/plate

Metabolic activation

+/-

Species/Test system

Salmonella typhimurium

Method Ames-test

Source Literature

Mutagenic
 Metabolic activation
 +/-
 Species/test system mouse lymphoma L 5178 Y TK +/- cells
 Method mouse lymphoma test
 Source Literature

Slight increase in SCEs
 Metabolic activation
 +/-
 Species/test system
 CHO cells
 Method SCE test
 Source Literature

No increase in the SCE rate up to cytotoxic concentrations.
 Species/test system
 human lymphocytes
 Method SCE test
 Source Literature

No increase in the number of micronuclei.
 Application method oral
 Dos./concentration 4250 mg/kg
 Application interval 1 dose
 Species/test system
 mouse
 Method Micro-nucleus test/ OECD 474
 Source Literature

No increase in the number of micronuclei
 Application method oral
 Dos./concentration 1130 mg/kg
 Application interval 4 doses
 Species/test system
 mouse
 Method Micro-nucleus test/OECD 474
 Source Literature

Non-mutagenic
 Application method inhalational
 Application interval 6 h/d
 Application period
 Species/Test System 5 d
 CD-1 mouse (male)
 Method Dominant lethal test
 Source Literature

The data mentioned above refer to the component methyl methacrylate.

Teratogenicity
 No indications of toxic effects were observed in reproduction studies in animals.
 Application method inhalational
 Dosage 2028 ppm
 Application period 6 to 15 d gest.
 Species rat
 Method OECD 414
 Source Literature

The data mentioned above refer to the component methyl methacrylate.

Carcinogenicity
 Non-carcinogenic in inhalation and feeding studies carried out on rats, mice, and dogs.
 Source Literature

The data mentined above refer to the component methyl methacrylate.

Chronic toxicity
 Application method inhalational
 Dosage 250 to 1000 ppm
 Application interval 6 h/d, 5 d/w
 Application period 2 a
 Species rat
 Source Literature
 Findings: Damage to the mucous membranes in nose, throat and lungs.
 Degeneration of the olfactory epithelium.
 The data mentioned above refer to the component methyl methacrylate

Chronic toxicity
 Application method inhalational
 Dosage 500 to 100 ppm
 Application interval 6 h/d, 5 d/w
 Application period 2 a
 Species mouse
 Source Literature
 Findings: Damage to the mucous membranes in nose, throat and lungs.
 Degeneration of the olfactory epithelium.
 The data mentioned above refer to the component methyl methactylate.

Further information on toxicology Methaemoglobinaemia possible after skin contact. Symptoms of poisoning may not occur for many hours. Liver damage is possible. The data mentioned above refer to the component N,N-dimethyl-p-toluidine. There are no toxicological data available for the product as such. Carefully avoid contact with skin and eye as well as inhalation of product vapors.

SECTION 11 – ECOLOGICAL INFORMATION

INFORMATION ON ELIMINATION (persistence and degradability)

Biodegradability

Duration of test 30.7%
 Method OECD 301 C 28 d
 >95%
 Method test according to Zahn/Wellens
 Source Literature

The product is not readily biodegradable to OECD criteria but is inherently biodegradable.

Exotoxicological effect

Fish toxicity (LC50) >79 mg/l
 Length of exposure 96 h
 Species oncorhynchus mykiss, rainbow trout
 Method OECD 203/ ISO 7346/ EEC 84/449/V,C1
 Source Literature
 Fish toxicity (LC50) 40 mg/l
 Length of exposure 96 h
 Species oncorhynchus mykiss, rainbow trout
 Method OECD 203/ ISO/ 7346/ EEC 84/449/V,C1
 Source Literature
 Daphnia toxicity (EC50) 69 mg/l
 Length of exposure 48 h
 Species daphania magna
 Method OECD 202/ ISO 6341/ EEC 84/ 449/ V, CD
 Source Literature

Algae toxicity (EC3)
 Length of exposure 37 mg/l
 8 d
 Species scenedesmus quadricauda
 Method DIN 38412 part 9
 Source Literature

Algae toxicity
 Length of exposure 170 mg/l
 4 d
 Species selenastrum capricornutum
 Method OECD 201/ ISO 8692/ EEC 88/ 302/V, C
 Source Literature

Bacteria toxicity (ECO)
 Species pseudomonas putida
 100 mg/l

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 12 – 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 13-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 14 – REGULATORY INFORMATION

Labelling in accordance with GefStoffv/EC
requires labeling

Hazardous components for labeling

contains N, N-Dimethyl-p-toluidine

Hazard symbols

Xn Harmful
F Highly flammable

R -phrases

11 Highly flammable
20/21/22 Harmful by inhalation, in contact with skin and if swallowed
36/37/38 Irritating to eyes, respiratory system and skin.
43 May cause sensitization by skin contact.

S -phrases

9 Keep container in well ventilated place.
16 Keep away from sources of ignition, No smoking
29 Do not empty into drains.
33 Take precautionary measures against static discharges.

SECTION 15 – OTHER INFORMATION

The product is normally supplied in a stabilized form.

If the permissible storage period and /or storage temperature is noticeably exceeded, the product may polymerize with heat evolution.

The details are based on the current level of expertise which we have achieved, they are intended as description of the products safety requirements and are not to be seen as guarantee of certain product features.

SECTION 16 – PREPARATION OF MATERIAL SAFETY DATA SHEET

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REVISED: Aug 10, 2006