MATERIAL SAFETY DATA SHEET • MSDS

SECTION 1 • *PRODUCT IDENTIFICATION*

TRADE NAME	**TECHNOVIT 4002, HARDERNER**
ANAMET PRODUCT NUMBER	**228-H**
CHEMICAL NAME	
MANUFACTURER / SUPPLIER'S NAME	ANAMET
ADDRESS	P.O. Box 538 BOUCHERVILLE, QUÉBEC, J4B 6Y2
TELEPHONE NO.	(450) 646-1290
EMERGENCY TELEPHONE NO.	**CANUTEC (613)-996-6666**

SECTION II • *COMPOSITION / INFORMATION ON COMPONENTS*

Chemical characterization Description	**CAS number**	**%**	**OSHA PEL (mg/m^3)**	**ACGIH TLV (mg/m^3)**
Methyl Methacrylate.	80-62-6	50-75%	410	Not available.
Styrene.	100-42-5	10-25%	Not available.	Not available.
N,N-dimethylaniline	121-69-7	< 1%	Not available.	Not available.

NOTE: Ingredients are listed on the TSCA Inventory of Chemical Substances. Those not identified are non-hazardous.

SECTION III • *PHYSICAL / CHEMICAL CHARACTERISTICS*

Boiling point in ºC	100 ºC (212°F)	**Vapor pressure (mm Hg)**	47mbar @ 20 ºC (68°F)
Melting point in ºC	Not determined.	**Vapor density (Air = 1)**	Not available.
Density (Water = 1)	1.8	**Evaporation rate (Butyl acetate= 1)**	Not available.
Solubility in water	Not miscible.		
Appearance and odor	Green liquid / characteristic odor.		

SECTION IV • *FIRE / EXPLOSION HAZARD*

Flash point	13 ºC (55.4°F)			
Flammable limits	**LEL**	1.2%	**UEL**	12.5 %
Extinguishing media	Carbon dioxide, extinguishing power, alcohol foam. Do not use water or water jet.			
Special fire fighting procedures	MSHA/NIOSH approved self-contained breathing apparatus recommended and suitable protective clothing should be worn in fire conditions. Keep fire exposed containers cool by spraying water. Take precautionary measures against static charge.			
Unusual fire and explosion hazards	Formation of toxic gases is possible during heating or in case of fire.			

SECTION V • *REACTIVITY*

Stability	Stable.
Conditions to avoid	Not available.
Incompatibility	Not available.
Hazardous decomposition products	No decomposition if used and stored according to specification.
Hazardous Polymerization	If stored longer than recommended and /or recommended temperature, product may polymerize generating heat.

SECTION VI • *TOXICOLOGICAL PROPERTIES OF PRODUCT*

A - SUGGESTED FIRST AID

Eyes	Irrigate with eyewash solution or clean water, holding the eyelids apart for at least 20 minutes. Obtain medical attention.
Skin	Remove contaminated clothing. Wash skin immediately with water for at least 20 minutes. If symptoms (irritation or blistering) occur obtain medical attention.
Inhalation	Remove patient from exposure, keep warm and at rest. Obtain immediate medical attention.
Ingestion	Do not induce vomiting. Obtain medical attention immediately.

B – TOXICOLOGICAL INFORMATION

PRIMARY ENTRY ROUTES: Inhalation, ingestion, skin, and eye contact.

Symptoms of poisoning may occur after several hours, therefore medical observation for at least 48 hours after the accident.

• SHORT TERM EXPOSURE

Inhalation	Vapor or mist can irritate the nose, throat and lungs. Symptoms such as sore throat, coughing, chest pain, shortness of breath and difficult breathing may occur.
Skin	Liquid or vapor can irritate the skin.
Eyes	Liquid or high concentrations of vapor or mist can cause severe eye irritation.
Ingestion	Liquid may cause burning of the mouth, throat and digestive tract with abdominal pain, nausea, vomiting, diarrhea, thirst, weakness, shock (collapse) and death. Permanent damage could result.

• LONG TERM EXPOSURE

Carcinogenicity	Styrene is listed by IARC as a Group 2B carcinogen.
Teratogenicity, Mutagenicity and other reproductive effects	Not available.
Skin Sensitization	The product is a skin sensitizer (allergy).
Respiratory tract sensitization	Respiratory sensitizer.
Synergistic materials	Not available.

SECTION VII • *PRECAUTIONARY INFORMATION*

PERSONAL PROTECTIVE MEASURES

Eye, face & hands	Safety spectacles/Full Face Shield. Wear suitable impervious (Neoprene) gloves. Gloves should be changed regularly and if excessive exposure has occurred.
Respiratory protection	Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. A suitable mask with filter may be appropriate. In the event of formation of particularly high levels of vapor a self-contained breathing apparatus may be appropriate.
Ventilation	Provide adequate ventilation, including appropriate local extraction, to insure that the defined occupational exposure limit is not exceeded. Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.
Hearing	As needed in accordance with OSHA 1910 215.
HMIS Ratings	Health: 2 Flammability: 3 Reactivity: 2

Components with critical values that require monitoring at the work place:		
80-62-6	methyl methacrylate	Short term value: 416 mg/m^3, 100 ppm Long term value: 208 mg/m^3, 50 ppm
100-42-5	styrene	Short term value: 1080 mg/m^3, 250 ppm Long term value: 430 mg/m^3, 100 ppm
121-69-7	N,N-dimethyaniline	Short term value: 50 mg/m^3, 10 ppm Long term value: 25 mg/m^3, 5 ppm

SECTION VIII • *SAFETY PRECAUTIONS IN CASE OF LEAKS OR SPILLS*

Spill or leak procedure	Eliminate sources of ignition. Ensure suitable personal protection (including respiratory protection) during removal of spillages. Prevent entry into drains. Adsorb spillages onto sand, earth or any suitable adsorbent material. Do not adsorb onto sawdust or other combustible materials. Transfer to a container for disposal or recovery. Spillages or uncontrolled discharges into watercourses must be alerted to the appropriate regulatory body.
Waste disposal	Disposal should be in accordance with local, state, or national legislation. Incinerate under approved controlled conditions Decontaminate empty drums before recycling.

SECTION IX • *STORAGE AND HANDLING*

Storage	Keep in a cool, well ventilated place. Keep away from sources of ignition-No Smoking. Keep away from heat and direct sunlight.
Handling	Avoid contact with skin and eyes. Avoid inhalation of high concentration of vapors. Use in well ventilated area. The vapor is heavier than air; beware of pits and confined spaces. Take precautionary measures against static discharges. Wear suitable protective clothing. Remove contaminated clothing promptly. Keep contaminated clothing in closed containers. Discard or launder before re-wearing. Inform laundry personnel of contaminant's hazards. Do not smoke, eat or drink in work areas. Wash hands thoroughly after handling this material. Maintain good housekeeping.
Shipping classification **DOT Hazard class**	• **Dot Shipping Name:** RESIN SOLUTION, special provision 640D • **TDG/UN Shipping Names:** Resin solution, inflammable • **UN Number:** UN1866 • **Hazard Class:** 3 • **Packing Group:** II • **TDG Exemption:** May be shipped as a LIMITED QUANTITY if container is 5L or less. • **Label:** 3 • **IATA Class:** 3 • **IMDG Class:** 3
HMIS Ratings	Health: 2 Flammability: 3 Reactivity: 2

SECTION X • *ECOLOGICAL INFORMATION*

Environmental Fate and Distribution	Styrene is hazardous to water. Do not empty into drains and water.
Persistence and Degradation	Not available.
Toxicity	Methyl methacrylate is only slightly toxic.
Effect of effluent treatment	Not available.

SECTION XI • *REGULATORY INFORMATION*

• EC REGULATIONS:

TSCA STATUS: On Toxic Substance Control Inventory.
CERCLA REPORTABLE QUANTITY: Styrene 1000 lbs (453.6 kg), Methyl Methacrylate, 1000 lbs (453.6 kg).
SARA TITLE III

- Section 302 : None
- Section 311/312: Acute, fire, chronic.
- Section 313: Methyl Methacrylate, Styrene.

RCRA STATUS: Methyl Methacrylate, U162

• CANADIAN REGULATIONS:

WHMIS Classification: E Corrosive Liquid; B2, D2A and D2B.

TERMINOLOGY

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstract Service

CFR: Code of Federal Regulations (Transportation in U.S.A.)

DOT: Department of Transportation (USA)

DSL: Domestic Substance List

IARC: International Agency for Research and Cancer

LC: Lethal Concentration

LD: Lethal Dosage

MSHA: Mine Safety and Health Administration (USA)

NIOSH: National Institute for Occupational Safety and Health (USA)

NTP: National Toxicology Program (U.S.A.)

OSHA: Occupational Safety and Health Administration (USA)

PEL: Permissible exposure limit.

STEL: Short term exposure limit.

TDG: Transportation of Dangerous Goods

TLV: Threshold limits value.

TSCA: Toxic Substances Control Act

TWA: Time-weighted average

USEPA: United States Environmental Protection Agency

WHMIS: Workplace Hazardous Materials Information System