



# Material Safety Data Sheet

## TEMAc-N Perfluoroalkyl Ethyl Methacrylates (Narrow Distribution)

Revised 03- November-2009

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### Material Identification

**Product name:** TEMAc-N (narrow distribution)  
**Chemical name:** Perfluoroalkyl ethyl methacrylates  
*1H,1H,2H,2H*-Perfluoroalkyl-1-methacrylates  
**Chemical formula:**  $\text{CH}_2=\text{C}(\text{CH}_3)\text{C}(\text{O})\text{OCH}_2\text{CH}_2(\text{CF}_2\text{CF}_2)_n\text{F}$ ,  $n = 3, 4, 5, \dots$ ; mostly  $n = 4$   
 $\text{C}_n\text{H}_9\text{F}_m\text{O}_2$ ;  $n = 10, 12, 14, \dots$ ;  $m = 2n-9$

#### Company Identification

**Distributor** Top Fluorochem Co., Ltd.  
Building C2, 3<sup>rd</sup> Floor  
479 Chun Dong Road  
XinZhuang Industrial Park  
Minhang District  
Shanghai, P. R. China 201108

**Manufacturer** Fuxin Hengtong Fluorine Chemicals Co., Ltd.  
Fuxin Chemicals Community  
West Pingan St.  
Haizhou District  
Fuxin City, Liaoning Province, P. R. China

**Emergency Call** +86-21-54833399

### 2. COMPOSITION AND INFORMATION ON INGREDIENTS

#### Components

Material	CAS Number	EINECS	TSCA Listed	Amount
Perfluoroalkyl ethyl methacrylates	65530-66-7	Not available	Yes	
2,6-Di- <i>tert</i> -butyl-4-methylphenol	128-37-0	204-881-4	Yes	30 ppm

### 3. HAZARDS IDENTIFICATION

#### Potential Health Effects

**Skin contact:** May cause irritation.  
**Eye contact:** May cause irritation.  
**Inhalation of spray or mist:** May cause nasal, throat, or lung irritation.  
**Inhalation of large amounts:** May be toxic to the lungs.  
**Symptoms:** May be modest initially, followed in hours by severe

shortness of breath requiring prompt medical attention.

**Carcinogenicity Information:**

None of the components present in this material at concentrations equal to or greater than 0.1 % are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

**4. FIRST AID MEASURES**

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Skin Contact:** Flush skin with water after contact. Wash contaminated clothing before reuse.

**Eye Contact:** In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

**Ingestion:** If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a physician.

**Note to Physicians:** Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400 mL water and mix thoroughly. Administer 5 mL/kg, or 350 mL for an average adult.

**5. FIRE FIGHTING MEASURES**

**Flammable Properties**

**Flash point:** > 110 °C  
**Method:** PMCC

**Hazardous Decomposition Products:** Hazardous decomposition products include carbon dioxide, carbon monoxide, and hydrogen fluoride. Toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.

**Extinguishing Media:** Water spray, foam, dry chemical, CO<sub>2</sub>.

**Fire Fighting Instructions:** Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus. Wear full protective equipment. Avoid breathing decomposition products.

**6. ACCIDENTAL RELEASE MEASURES**

**Safeguards (Personnel)**

**NOTE:** Review FIRE FIGHTING MEASURES and HANDLING (Personnel) sections before proceeding with clean-up. Use appropriate personal protective equipment during clean-up.

**Spill clean up:** Soak up with sawdust, sand, oil dry or other absorbent material. Shovel or sweep up. Flush spill area with water.

---

## 7. HANDLING AND STORAGE

---

**Handling (Personnel):**

Avoid breathing vapors or mist. Avoid breathing dust. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling. Do not store or consume food, drink, or tobacco in areas where they may become contaminated with this material. Avoid circumstances that produce respirable particles unless suitable ventilation and respirator are used.

**Storage:**

Keep container tightly closed.

Freezing will affect physical condition but will not damage material. Thaw and mix before using. Refrigerate for long-term storage. Keep away from open flames and heated surfaces above 200 °C.

---

## 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

---

**Engineering Controls:**

Keep container tightly closed. Use only with adequate ventilation. Vent heated extruder or dryer fumes outside work area. Do not aerosolize. In spray applications, use airless type pressure spray equipment at less than 60 psi, and exhaust ducts, drip pans, or other design features to minimize worker exposure to mists and overspray.

Keep away from open flames and heated surfaces above 200 °C.

**Personal Protective Equipment**

**Eye/face protection:**

Wear safety glasses or cover-all chemical splash goggles.

**Respirators:**

Where there is potential for airborne exposures wear NIOSH approved respiratory protection.

**Protective clothing:**

Where there is potential for skin contact have available and wear as appropriate impervious gloves, apron, pants, and jacket.

**Exposure Guidelines**

**PEL (OSHA):**

None established.

**TLV (ACGIH):**

None established.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

---

<b>Boiling Point</b>	210 to 350 °C @ 760 mm Hg
<b>Melting Point</b>	- 17 to 24 °C
<b>Flash Point</b>	> 110 °C
<b>Molecular Weight</b>	~ 600 (average of mixture)
<b>Specific Gravity</b>	1.6 g/mL
<b>pH</b>	3 to 5
<b>Odor</b>	Mild acrylic
<b>Form</b>	Semi-solid
<b>Color</b>	Colorless to amber
<b>Refractive Index</b>	1.3384 @ 25 °C
<b>Solubility in Water</b>	0 weight %

---

## 10. STABILITY AND REACTIVITY

---

<b>Chemical Stability:</b>	Stable at normal temperatures and storage conditions.
<b>Incompatibility with Other Materials:</b>	Incompatible with peroxides, strong acids, strong bases.
<b>Decomposition:</b>	Hazardous decomposition products including carbon dioxide, carbon monoxide, hydrogen fluoride, toxic gases or particles may be formed during combustion. These products may cause severe eye, nose, throat, and lung irritation or toxic effects.
<b>Polymerization:</b>	Conditions leading to polymerization are heat and peroxides (or other free radical sources) with little hazard. Polymerization may occur with peroxides or heat with little hazard. Polymer soluble in monomer and "Freon" 113. Contains inhibitor. Stable at 4 °C for several months.

---

## 11. TOXICOLOGICAL INFORMATION

---

<b>Animal Data:</b>	Inhalation 4 hour LC50: 4.47 mg/L in rats Oral LD50: 17,000 mg/kg in rats
	The product is not a skin irritant, eye irritant or skin sensitizer in animals. Single inhalation exposures caused nonspecific effects such as weight loss and irritation. Repeated inhalation produced nonspecific effects such as weight loss and irritation, and minor changes in blood analysis. Repeated ingestion exposures caused reversible changes in the liver and spleen. There are no animal test data available to define the carcinogenic, mutagenic, developmental or reproductive hazards of the product.

---

## 12. ECOLOGICAL INFORMATION

---

No data available.

<b>General:</b>	Take care to prevent chemicals from entering the ground, water courses or drainage systems.
-----------------	---

---

## 13. DISPOSAL CONSIDERATIONS

---

**Waste Disposal:** Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

**14. TRANSPORTATION INFORMATION**

<b>Mode</b>	DOT/IMDG/IATA
<b>UN Number</b>	None. Non-hazardous for transport.
<b>Class (Subsidiary)</b>	None. Non-hazardous for transport.
<b>Proper Shipping Name</b>	None. Non-hazardous for transport.
<b>Hazard Label (Subsidiary)</b>	None. Non-hazardous for transport.
<b>Packing Group</b>	None. Non-hazardous for transport.
<b>Shipping Hazard Label</b>	None. Non-hazardous for transport.

**15. REGULATORY INFORMATION**

<b>U.S. Federal Regulations</b>	TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312
<b>Acute :</b>	Yes
<b>Chronic :</b>	No
<b>Fire :</b>	No
<b>Reactivity :</b>	No
<b>Pressure :</b>	No

**In compliance with TSCA Inventory requirements.**

**16. OTHER INFORMATION**

<b>Personal Protection Rating:</b>	To be supplied by user depending on use conditions.
<b>NPCA-HMIS rating:</b>	Health: 2 Flammability: 1 Reactivity: 1

**Legal Disclaimer:** For R&D use only. Not for drug, household, or other uses. The previous information is based upon our current knowledge and experience of our product and is not exhaustive. It applies to the product as defined by the specifications. In case of combinations or mixtures, one must confirm that no new hazards are likely to exist. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and integrity of the work environment. Unless noted to the contrary, the technical information applies only to pure product.

To our actual knowledge, the information contained herein is accurate as of the date of this document. However, neither Top Fluorochem, nor any of its affiliates makes any warranty, express or implied, or accepts any liability in connection with this information or its use. This information is for use by

technically skilled persons at their own discretion and risk and does not relate to the use of this product in combination with any other substance or any other process. This is not a license under any patent or other proprietary right. The user alone must finally determine suitability of any information or material for any contemplated use, the manner of use and whether any patents are infringed. This information gives typical properties only and is not to be used for specification purposes.

End of MSDS