PTFE FLUOROPOLYMER TUBING

SECTION 1 - PRODUCT INFORMATION
MANUFACTURER'S NAME: INSULATION SOURCES, INC DBA ICO RALLY
COMPANY PHONE NUMBER: 650-856-9900
CHEMICAL NAME: PTFE (Polytetrafluoroethylene) tubing
SYNONYMS: PTFE
CHEMICAL FAMILY: Fluorocarbon polymer
MAJOR APPLICATIONS: Tubing, pipe, related products

SECTION 2 - INGREDIENTS / IDENTITY INFORMATION
COMPONENTS | CAS NUMBER | OSHA PEL | TCA LISTED
--- | --- | --- | ---
Polytetrafluoroethylene | 9002-84-0 | Not listed | Listed

SECTION 3 - HAZARDOUS INGREDIENTS
COMPONENTS | CAS NUMBER | %
--- | --- | ---
Polytetrafluoroethylene | 9002-84-0 | 100

Heated above 400 deg C (750 deg F) can evolve as degradation products:
Hydrogen fluoride | 7664-39-3 | <1
Carbonyl fluoride | 353-50-4 | <1

Remarks
Material is not known to contain Toxic Chemicals under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

SECTION 4 - PHYSICAL DATA
BOILING POINT | Not applicable
MELTING POINT | 327-372 deg C (621-648 deg F)
SPECIFIC GRAVITY (H2O=1) | 2.13-2.20 at 25 deg C
VAPOR PRESSURE (mm Hg) | Not applicable
VAPOR DENSITY (Air=1) | Not applicable
EVAPORATION RATE (Butyl acetate=1) | Not applicable
SOLUBILITY IN WATER | Insoluble
APPEARANCE AND ODOR | Translucent to milky-white tubing or related product: no odor

SECTION 5 - FIRE AND EXPLOSION HAZARD DATA
FLASH POINT, METHOD | 530-550 deg C (986-1022 deg F), ASTM D1929
SELF IGNITION TEMPERATURE, METHOD | 520-560 deg C (968-1040 deg F), ASTM D1929
UL-94 FLAMMABILITY RATING | V-0
LIMITING OXYGEN INDEX, METHOD | >95, ASTM D 2863
EXTINGUISHING MEDIA | Water, foam, dry chemical, CO2, as appropriate for surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES | Wear self-contained breathing apparatus. Wear full protective equipment.
UNUSUAL FIRE AND EXPLOSION HAZARDS  Products will emit toxic fumes at high temperatures.

Does not burn without an external flame. Protect from hydrogen fluoride fumes which react with water to form hydrofluoric acid. Wear neoprene gloves when handling refuse from a fire involving PTFE (Polytetrafluoroethylene).


Hazardous gases/vapors produced in a fire are hydrogen fluoride (HF), carbon monoxide, and potentially toxic fluorinated compounds.

SECTION 6 - HEALTH HAZARD DATA
ACUTE EFFECTS OF EXPOSURE

<table>
<thead>
<tr>
<th>INGESTION</th>
<th>Harmless.</th>
</tr>
</thead>
<tbody>
<tr>
<td>EYE CONTACT</td>
<td>May cause eye irritation.</td>
</tr>
<tr>
<td>SKIN CONTACT</td>
<td>Does not irritate human skin.</td>
</tr>
<tr>
<td>INHALATION</td>
<td>Inhalation of fumes from overheating (above 300 deg C/572 deg F) PTFE (Polytetrafluoroethylene) may cause polymer fume fever, a temporary flu like illness with fever, chills, and sometimes cough, of approximately 24 hours duration. Trace amounts of carbonyl fluoride and hydrogen fluoride may also be evolved when PTFE is overheated or burned above 400 deg C (750 deg F). Inhalation of low concentrations of HYDROGEN FLUORIDE can initially include symptoms of choking, coughing, and severe eye, nose, and throat irritation. This is possibly followed after a symptomless period of one to two days by fever, chills, difficulty in breathing, cyanosis, and pulmonary edema. Acute or chronic overexposure to HF can injure the liver and kidneys. Inhalation, ingestion, or skin or eye contact with CARBONYL FLUORIDE may initially include: skin irritation with discomfort or rash; eye corrosion with corneal or conjunctural ulceration; irritation of the upper respiratory passages; or temporary lung irritation effect with cough, discomfort, difficulty in breathing, or shortness of breath. Individuals with preexisting diseases of the lungs may have increased susceptibility to the toxicity of excessive exposures from thermal decomposition products.</td>
</tr>
</tbody>
</table>

CARCINOGENICITY  
NTP: Not listed  
IARC: Not listed  
OSHA: Not listed

EMERGENCY AND FIRST AID PROCEDURES

INHALATION No specific intervention is indicated as the PTFE TUBING is not likely to be hazardous by inhalation. Consult a physician if necessary. If exposed from fumes from overheating or combustion, move to fresh air. Consult a physician if symptoms persist. 

SKIN CONTACT The PTFE TUBING is not likely to be hazardous by skin contact. 

EYE CONTACT In case of contact, immediately flush eyes with plenty of water and get medical attention if irritation occurs. 

INGESTION No specific intervention is indicated as the PTFE TUBING is not likely to be hazardous by ingestion. If gastrointestinal symptoms develop, get medical attention.
PERSONAL PROTECTION

RESPIRATORY  Where the material temperature is above 300 deg C (572 deg F), use a positive pressure supplied air respirator.

EYE PROTECTION  Not normally required.

PROTECTIVE CLOTHING  Not normally required.

OTHER PROTECTIVE EQUIPMENT  Not applicable.

VENTILATION  Provide local exhaust if PTFE TUBING is heated above 300 deg C (572 deg F).

SECTION 7 - REACTIVITY DATA

STABILITY  X Stable  Unstable

INCOMPATIBILITY (MATERIALS TO AVOID)  Molten alkali metals and interhalogen compounds.

HAZARDOUS DECOMPOSITION PRODUCTS  When heated above 300 deg C (572 deg F), may cause evolution of particulate matter, which can cause polymer fume fever. When heated above 400 deg C (750 deg F), small amounts of hydrogen fluoride and perfluorohydrocarbons such as tetrafluoroethylene, hexafluoropropylene, perfluoroisobutylene, and carbonyl fluoride may be evolved.

HAZARDOUS POLYMERIZATION  X Will not occur

SECTION 8 - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED  Recover undamaged material, clean as needed, and reuse.

WASTE DISPOSAL METHOD  Preferred methods for disposal are recycling and landfill. With incineration, gaseous products should be removed by alkaline scrubbing. Separate waste of this material from others and comply with Federal, State, and Local regulations concerning health and environment.

SECTION 9 - SPECIAL PRECAUTIONS OR OTHER COMMENTS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE  Above 275 deg C (527 deg F), PTFE TUBING can evolve toxic gaseous products. Provide good ventilation or respirator if there exists a probability of exceeding 260 deg C.

ADDITIONAL INFORMATION  None

SECTION 10 - SUPPLIER INFORMATION

DISCLAIMER  To the best of our knowledge the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy or completeness of such information. We strongly recommend that users seek and adhere to the manufacturer’s or supplier’s current instructions for handling each material they use and they satisfy themselves that they can meet all applicable safety and health standards.