



## TECHNICAL DATA SHEET

# Formula-8®

## PTFE Thread Sealant



**Formula-8 is engineered with mineralized PTFE in a shear-sensitive thixotropic paste that wets into, and seals threaded joints with strings of PTFE when torqued. Formula-8 is engineered to seal over the entire thread length for the life of the joint in liquid, gas, and vacuum service.**

**NSN 8030-01-527-7193**

- Aqueous-based PTFE dispersion formulation
  - Water soluble
  - Stable from cryogenic temperatures to 287°C (+550°F)
  - Stable in pressures up to 10,000 psi and in vacuums 10<sup>-3</sup> Torr
  - Chemically inert
  - Anti-galling, anti-corrosive, anti-seize
  - Prevents pipe damage on stainless steel, steel, and plastic
  - Silicone-free
  - Insidiously wets to threads, and once dried down, will not be dislodged
  - Will not cold flow over time
  - Will not jam check valves, pumps, or plug orifices
  - Non-migrating
  - Non-toxic, solvent-free, non-hazardous, odorless, non-flammable, VOC-free
  - Seals all sizes and types of threaded joints
  - Permits sealing or disassembly at relatively low torques
  - Engineered to replace thread sealing tapes
  - Eliminates challenges associated with tape
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- Natural gas applications
  - Cryogenic applications
  - Welding and industrial gases
  - Gasoline, diesel, kerosene fuel systems
  - Hydraulic systems
  - Vacuum service to 10<sup>-3</sup> Torr
- Medical
  - Wafer fab
  - Offshore drilling rigs
  - Coal power plants
  - Aerospace
  - Chemical processing
  - Medical
- Chlorine and powerful oxidizers
  - Oxygen systems
  - Valves in bottled gases
  - Instruments and fine threads
  - Machine and engine sensors
  - Ammonia and freon refrigeration service

**Formula-8 is a very safe, solvent-free product. Not classified as hazardous according to OSHA 29 CFR 1910.1200 and WHMIS. Not hazardous under the consumer product safety regulations. See Safety Data Sheet for additional information.**



**Do not store at temperatures below 0°C (32°F). Product only freeze sensitive in the paste state. Always keep unused product in original container, store upside down, tightly closed. Store in a cool, dry ventilated area. Avoid freezing and excessive heat during storage and shipping. DOT-classified as non-hazardous, can be shipped by air with no shipping restrictions. See Safety Data Sheet for additional information.**

- **NASA-tested (ASTM G72-82 and ASTM G86)**
- **NSF-approved for food processing areas**
- **BAM-tested**
- **WHA high pressure oxygen tested**
- **NSN 8030-01-527-7193**



| Test                        | Rating                                |
|-----------------------------|---------------------------------------|
| Appearance                  | Dispensed:<br>paste Dried:<br>hard    |
| Texture                     | Paste: smooth, free of lumps          |
| NLGI                        | Paste: paste:<br>2 Dried: hard:<br>na |
| Flammability<br>Flash Point | Non-<br>flammable<br>None             |
| VOC – EPA test 24           | Paste: 1.1%<br>Dried: 0.0 %           |
| Color/Odor                  | White/Odorless                        |
| Dropping Point              | Dried: none                           |
| Temperature Range           | Cryogenics to<br>+287°C (+550°F)      |
| NSF Approved                | S2                                    |

| Test  | Rating  |
|---|---|
| Vapor Pressure  | Dried: none   |
| Density   | Dried: 1.2 g/ml   |
| ASTM G72 Oxygen<br>Test AIT<br>High Pressure 6000<br>psi held at<br>constant steady<br>pressure | Dried:<br>6000 psi (414<br>bar) AIT: 173 C              |
| ASTM G72 Oxygen<br>Test AIT Standard<br>Test Pressure<br>1500 psi                               | Dried:<br>1500 psi (103<br>bar) AIT: 180 C              |
| ASTM G86 Oxygen<br>Impact test<br>3015 psi & 72 ft-lbs<br>(98 J) impact                         | Dried: Samples: 20<br>Number Reactions:<br>0            |
| BAM oxygen gaseous<br>tested at 60c   | Paste: 2320 psi (160<br>bar) Dried: 435 psi (30<br>bar) |
| BAM oxygen liquid   | Paste: No<br>limitations Dried:<br>No limitations       |
| Solubility in Sulfuric<br>Acid  | Dried: none, no effect                                  |
| Praxair GS-38   | Approved  |

- **Clean the male and female threads of any dirt or oil.**
- **Using a brass or stainless-steel wire brush clean off any material on the threads.**
- **Wipe down the threads using a lint free cloth and acetone.**
- **Starting one to two threads back from the end of the male fitting, use your finger to liberally apply Formula-8 to fill the threads.**
- **Fit and torque the male and female pieces together. Hand tighten or use standard pipe tools to torque.**
- **Wipe off excess sealant.**
- **Let dry down 12 hours before returning to service.**
- **Be careful not to over-tighten fittings, especially plastic, pvc, or cast iron, as the fittings may crack.**



**On threaded joints ¼" or larger, Fluoramics suggests using Formula-8 and LOX-8 Full Density PTFE tape:**

- Clean the male and female threads of any dirt or oil.
- Starting two threads back from the end of the male fitting, apply two wraps of LOX-8 Full-Density PTFE Tape in the direction of thread rotation, maintaining tension on the tape while wrapping.
- Apply the thread sealant over the tape as instructed above.

| Part No. | Size                    | Container | Case Quantity |
|----------|-------------------------|-----------|---------------|
| 8900003  | 15 g (Net Wt. 0.52 oz)  | Tube      | 12            |
| 8900006  | 100 g (Net Wt. 3.52 oz) | Tube      | 24            |
| 8900008  | 650 g (Net Wt. 22.9 oz) | Jar       | 12            |



**FORMULA-8® IS COMPATIBLE WITH THESE AND OTHER SIMILAR GASES AND AGGRESSIVE CHEMICALS:**

Acetylene  
 Aluminum Chloride  
 Ammonium Nitrate  
 Ammonium  
 Perchlorate  
 Antimony Trichloride  
 Bromine  
 Calcium  
 Hypochlorite Carbon  
 Dioxide  
 Chlorosilanes  
 Chlorosulfonic Acid  
 Chromic Acid  
 Diesel Fuel  
 Ethylene  
 Fluorine  
 Gasoline

Helium  
 Hydraulic Oils  
 Hydriodic Acid  
 Hydrogen  
 Hydrogen  
 Bromide  
 Hydrogen  
 Peroxide  
 Hydrogen Sulfide  
 Iodine  
 Kerosene  
 Muriatic Acid  
 Nitric Acid  
 Nitrogen Oxides  
 Oleum  
 Oxygen

Perchlorate  
 Phosphoric Acid  
 Potassium  
 Potassium  
 Persulfate Propane  
 Propylene Oxide  
 Silane  
 Silicone  
 Tetrachloride  
 Sodium  
 Hypochlorite  
 Sodium Perchlorate  
 Sulfur Dioxide  
 Sulfur Trioxide  
 Sulfuric Acid  
 Titanium  
 Tetrachloride

**FORMULA-8® IS COMPATIBLE WITH THE FOLLOWING PIPES AND THREADS:**

All plastics  
 Aluminum  
 Brass  
 Bronze  
 Cured epoxies  
 EPDM  
 Ethylene propylene  
 rubber Fluoro-silicones

Glass –  
 ceramics Iron  
 Kynar PVDF  
 Lead  
 Neoprene  
 Polycarbonates  
 Polyamides  
 Polyvinyl  
 alcohol

PTFE type plastics  
 Rigid PVC/CPVC  
 Silicone Tubing  
 Stainless steel  
 Steel  
 Urethanes  
 Viton™ formulated  
 plastic Zinc