

## Gasket Grades and Recommendations



Tyco Fire Products --- www.tyco-grooved.com  
 451 North Cannon Avenue, Lansdale, Pennsylvania 19446 --- USA  
 Customer Service/Sales: Tel: (215) 362-0700 / Fax: (215) 362-5385  
 Technical Services: Tel: (800) 381-9312 / Fax: (800) 791-5500

**Grooved Piping Products**



### General Description

The Gasket Recommendation Tables have been developed to assure maximum service life. The tables have been developed from information supplied by the material manufacturers of the elastomer, technical reference literature and testing conducted by Tyco Fire Products.

In evaluating the gasket grade for intended service applications the following consideration must be reviewed:

- System operation temperature
- Fluid or solution concentration
- Duration of service

All gasket recommendations are based on a temperature of 70°F (21°C) unless otherwise noted.

Grooved Engineering should be consulted if combinations of service solutions are being considered. Contact Grooved Engineering for recommendations for services not listed.

Gasket recommendations apply to Tyco Fire Products gaskets and valves for grooved products only.

For information on prelubricated gaskets, please refer to the prelubricated gasket data sheet.



### Technical Data

#### Standard Gaskets

Grade	Temp. Range	Compound	Color Code	General Service Application
A	Ambient to +150°F (+66°C)	EPDMA	Violet	Fire Protection Systems. Not Recommended for Hot Water Systems. For dry pipe or freezer systems, use Tri-Seal Grade E Gaskets
E	-30°F (-34°C) to +230°F (+110°C)	EPDM	Green	Hot water, dilute acids, alkalies, and many chemical services not involving petroleum products. Excellent oxidation resistance. Not for use with Hydrocarbons.
T	-20°F (-29°C) to +180°F (+82°C)	Nitrile	Orange	Petroleum products, vegetable oils, and air with oils. Not recommended for Hot Water Systems. Not recommended for Hot Dry Air over +140°F (+60°C)

#### Water And Air

Service	Gasket Grade
Air, (no oil vapors) Temp. -30°F (-34°C) to +230°F (+110°C)	E
Air, Oil Vapor, Temp. -20°F (-29°C) to +150°F (+66°C)	T
Water, Temp. to +150°F (+66°C)	A/E
Water, Temp. to +230°F (+110°C)	E
(NOT RECOMMENDED FOR STEAM SERVICE)	
Water, Acid Mine	E/T
Water, Chlorine	E
Water, Deionized	E
Water, Seawater	E
Water, Waste (NO PETROLEUM PRODUCTS)	E

# Gasket Recommendations

- Contact Grooved Engineering for an Engineering evaluation and recommendations where the gasket grade is shown in parenthesis.
- Specify gasket grade when ordering.
- For dry pipe systems or freezer systems, use Tri-Seal freezer gasket and petroleum free silicone lubricant.
- Check gasket color code to be certain it is recommended for the service intended.
- Unless otherwise noted, all gasket listings are based upon a temperature of 70°F (21° C).
- For services not listed contact Grooved Engineering for recommendations.
- Where more than one gasket is shown, the preferred gasket grade is listed first.

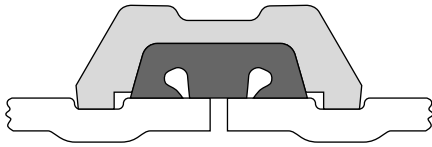
Chemical Composition	Gasket Grade	Chemical Composition	Gasket Grade
Acetic Acid up to 10%	E	Butylene	T
Acetone	E	Calcium Bisulphate	T
Acetylene	E/T	Calcium Chloride	E/T
Alkalis	E	Calcium Hydroxide (Lime)	E/T
Aluminum Chloride	E/T	Calcium Sulfate	E/T
Aluminum Fluoride	E/T	Calcium Sulfide	E
Aluminum Hydroxide	E	Carbitol	E/T
Aluminum Nitrate	E/T	Carbon Dioxide, Dry	E/T
Aluminum Salts	E	Carbon Dioxide, Wet	E/T
Ammonia Gas, Cold	E	Carbon Monoxide	E
Ammonia Liquid	E	Caustic Potash	E
Ammonium Chloride	E/T	Chrome Alum	T
Amyl Acetate	E	Citric Acid	E
Amyl Alcohol	E	Copper Chloride	T
Aniline	E	Copper Cyanide	T
Arsenic Acid to 75%	T	Copper Sulphate	E/T
Barium Carbonate	E	Cupric Fluoride	T
Barium Chloride	E/T	Cupric Sulphate	E/T
Barium Hydroxide	E/T	Diethyl Phthalate	E
Benzoic Acid	E	Ethane	E
Benzyl Alcohol	E	Ethanolamine	E
Borax Solutions	E	Ethyl Alcohol	E/T
Boric Acid	E/T	Ethyl Chloride	E
Butyl Alcohol	E/T	Ethylene Chlorohydrin	E

# Chemical Services

Chemical Composition	Gasket Grade	Chemical Composition	Gasket Grade
Ethylene Diamine	T	Potassium Bromide	E/T
Ethylene Glycol	E/T	Potassium Carbonate	E/T
Ferric Sulphate	T	Potassium Chloride	E
Fluboric Acid	E	Potassium Chromate	T
Fly Ash	E	Potassium Hydroxide	T
Fomaldehyde	E/T	Propylene Glycol	E
Formamide	E/T	Salicylic Acid	E
Formic Acid	E	Silver Nitrate	E
Fructose	T	Soda Ash, Sodium Carbonate	E/T
Furfuryl Alcohol	E	Sodium Bicarbonate	E/T
Glycerin	E/T	Sodium Bisulphate	E/T
Glycerol	E/T	Sodium Bisulphite (black liquor)	E/T
Glycol	E/T	Sodium Bromide	E/T
Heptane	T	Sodium Chlorate	E
Hexaldehyde	E	Sodium Chloride	E/T
Hexane	T	Sodium Cyanide	E/T
Hexylene Glycol	T	Sodium Hydroxide, to 50%	E
Hydrochloric Acid to 36%, 75°F(24°C) Max	E	Sodium Hypochlorite, to 20%	E
Hydrofluosilicic Acid	T	Sodium Metaphosphate	T
Isobutyl Alcohol	T	Sodium Nitrate	E
Isopropyl Alcohol	E	Sodium Peroxide	E
Lead Acetate	T	Sodium Phosphate	T
Lithium Bromide	T	Sodium Silicate	T
Magnesium Chloride	E/T	Sodium Sulphide	T
Magnesium Hydroxide	E/T	Sodium Sulphite Solution, to 20%	T
Magnesium Sulphate	E/T	Sodium Thiosulphate, "Hypo"	T
Methyl Alcohol, Methanol	E/T	Stannous Chloride, to 15%	T
Methyl Ethyl Ketone	(E)	Stearic Acid	T
Methyl Isobutyl Carbinol	E	Sulphur	E
Mineral Oils	T	Sulphuric Acid, to 25%, 150°F (66°C) Max	E
Nickel Chloride	E/T	Toluene 30%	T
Nickel Plating Solution 125°F (52°C) Max	E	Triethanolamine	E/T
Nitric Acid, to 10%, 75°F (24°C) Max	E	Trisodium Phosphate (11lbs./50gal.)	E
Nitrous Oxide	E	Turpentine 158°F (70°C) Max	(T)
Ozone	E	Urea	T
Phosphate Ester	E	Vegetable Oil	T
Phosphoric Acid to 75% & 70°F (21°C) Max	E/T	Vinyl Acetate	E

### Tri-Seal Freezer Gasket

The Tri-Seal Grade E freezer gasket is used primarily for dry pipe fire protection systems and freezer applications. The Tri-Seal freezer gasket differs from standard gaskets by closing off the gap or gasket cavity. This is accomplished by positioning the center “rib” of the gasket over the gap between the pipes. The Tri-Seal freezer gasket has two tapered sealing edges in addition to the center rib for additional strength and sealing.



The Tri-Seal freezer gasket is available in sizes 1 1/4" to 12" and is designed for use with Figure 572, 575, 705, 707 and 772 Couplings. A petroleum-free silicone based lubricant is recommended for dry pipe systems. For low temperature services or dry systems in cold storage or freezer applications, use Tri-Seal freezer gaskets. For vacuum services greater than 10" Hg, Tri-Seal gaskets should be used.

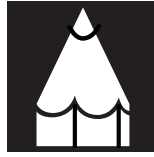
**Note: Rigid couplings are recommended for vacuum, dry pipe and freezer applications.**

Note: Dry Pipe and freezer systems are unique applications which benefit from proper pipe preparation and the use of rigid couplings, such as our Figures 572 and 772 couplings and our Tri-Seal gaskets. Reducing couplings are not recommended for this application. Standard lube is not recommended for this application as it freezes and can cause leakage.

Proper pipe end preparation and grooving is mandatory to prevent leakage (See specifications for cut and roll grooving). The gasket seat surface must be free from score marks, ridges, indentations, projections, loose paint, flaking, galvanizing, scale, dirt chips, grease, rust, etc. which would prevent a positive seal.

The best choice for a trouble free system is to use our rigid couplings with our Tri-Seal gaskets and a petroleum free silicone lubricant.

General Notes: It is the Designer's responsibility to select products suitable for the intended service and to ensure that pressure ratings and performance data is not exceeded. Always read and understand the installation instructions (IH-1000). Never remove any piping component nor correct or modify any piping deficiencies without first depressurizing and draining the system. Material and gasket selection should be verified to be compatible for the specific application.



## Ordering Procedure

**Ordering Information:** When placing an order, indicate the full product name. Please specify the quantity, type of gasket, EPDM “A”, Tri-Seal “E”, or Nitrile.

**Availability and Service:** Grooved Piping Products, valves, accessories and other products are available throughout the U.S., Canada, and internationally, through a network of distribution centers. You may write directly or call 215-362-0700 for the distributor nearest you.



## Care and Maintenance

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in accordance with the applicable standards of the National Fire Protection Association (e.g., NFPA 25), in addition to the standards of any authority having jurisdiction. The installing contractor or product manufacturer should be contacted relative to any questions. Any impairment must be immediately corrected.

It is recommended that automatic sprinkler systems be inspected, tested, and maintained by a qualified Inspection Service.



## Limited Warranty

Products manufactured by Tyco Fire Products are warranted solely to the original Buyer for ten (10) years against defects in material and workmanship

when paid for and properly installed and maintained under normal use and service. This warranty will expire ten (10) years from date of shipment by Tyco Fire Products. No warranty is given for products or components manufactured by companies not affiliated by ownership with Tyco Fire Products or for products and components which have been subject to misuse, improper installation, corrosion, or which have not been installed, maintained, modified or repaired in accordance with applicable Standards of the National Fire Protection Association (NFPA), and/or the standards of any other Authorities Having Jurisdiction. Materials found by Tyco Fire Products to be defective shall be either repaired or replaced, at Tyco Fire Products' sole option. Tyco Fire Products neither assumes, nor authorizes any person to assume for it, any other obligation in connection with the sale of products or parts of products. Tyco Fire Products shall not be responsible for sprinkler system design errors or inaccurate or incomplete information supplied by Buyer or Buyer's representatives.

IN NO EVENT SHALL TYCO FIRE PRODUCTS BE LIABLE, IN CONTRACT, TORT, STRICT LIABILITY OR UNDER ANY OTHER LEGAL THEORY, FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO LABOR CHARGES, REGARDLESS OF WHETHER TYCO FIRE PRODUCTS WAS INFORMED ABOUT THE POSSIBILITY OF SUCH DAMAGES, AND IN NO EVENT SHALL TYCO FIRE PRODUCTS' LIABILITY EXCEED AN AMOUNT EQUAL TO THE SALES PRICE.

**THE FOREGOING WARRANTY IS MADE IN LIEU OF ANY AND ALL OTHER WARRANTIES EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**



Certified Company