

# Seal Selection Guide

## Elastometric Seal Construction



### 1.0 PRODUCT DESCRIPTION

This seal selection guide is separated into four discrete sections: Gasket seals for Couplings, Seals for Vic-Press®, O-Rings for Victaulic Bolted Split Sleeve Products and General Definition/Seal Material Selection. This publication does not include Victaulic seals for valves. Refer to the individual Victaulic valve submittal for information on the seals available for each valve.

### 2.0 GASKET SEAL DATA

Victaulic offers a variety of synthetic elastomeric gaskets for a wide range of applications. To assure the maximum life for the service intended, proper gasket selection is essential.

Many factors can affect the performance and longevity of a gasket. These factors include, but are not limited to temperature, fluid, concentrations, a combination of fluids and duration of service. Temperatures outside of the design limits or use with incompatible fluids can reduce the performance capability of the gasket and service life.

Services listed are General Service Guidelines for each of the three associated product areas. It should be noted that there are services for which these gaskets, seals and o-ring are not compatible. Reference should always be made to the Gasket Chemical Services Guide for each Victaulic gasket Grade for specific service guidelines and for a listing of services which are not compatible.

Gasket, seals and o-ring guidelines apply only to Victaulic gaskets, seals and o-ring. Guidelines for a particular service does not necessarily imply compatibility of the coupling housing, related fittings, or other components for the same service. Victaulic gaskets are marked with the gasket size, style, and associated compound for identification.

### 3.0 POTABLE WATER

Grade "E" EPDM, Grade "E" Vic-Plus™, Grade "EHP", Grade "EHP" Vic-Plus, Grade "E2" and Grade "EW" gaskets are UL Classified in accordance with ANSI/ NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. Grade "EPW" is UL Classified in accordance with ANSI/ NSF 61 for cold +73°F/+23°C potable water service and ANSI/NSF 372. See Victaulic Publication 02.06 for more details.

Similarly, Victaulic Grade "M" halogenated butyl gasket material (which is used with Victaulic AWWA sized products) is UL Classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C potable water systems and ANSI/NSF 372. See Victaulic Publication 02.06 for more details.

The data provided is intended for use as an aid to qualified designers and specifiers when products are installed in accordance with the latest available Victaulic product line.

**ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.**

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

## 4.0 GASKET/SEAL/O-RING STYLES

Illustrations exaggerated for clarity



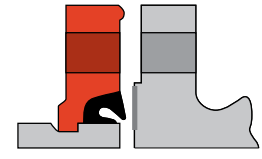
Installation-Ready™



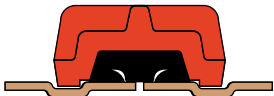
Standard



Reducing



Vic-Flange®



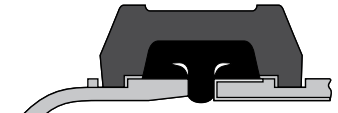
FlushSeal®



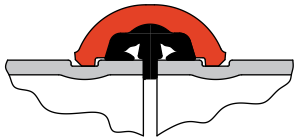
Grooved Copper Tubing  
with FlushSeal® Gasket



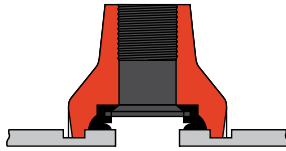
Advanced Groove System  
(AGS)



EndSeal®



Firelock EZ



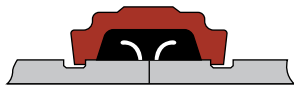
Outlet



Mechanical-T®



IPS to AWWA Transition



AWWA FlushSeal®



Plain End



Plain End Piping System  
for HDPE Pipe



pressed

pressed

Vic-Press® for Schedule  
10S Stainless Steel



FRP



Victaulic® Bolted Split-Sleeve Products  
(VBSP)

## 5.0 COUPLING GASKETS

Grade	Temp. Range <sup>1</sup>	Compound	Color Code	General Service Guidelines
<b>E</b>	-30°F to +230°F -34°C to +110°C	EPDM	Green Stripe	May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>
<b>EHP</b> <sup>2</sup>	-30°F to +250°F -34°C to +120°C	EPDM	Red and Green Stripes	May be specified for hot water service within the specified temperature range. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>
<b>T</b>	-20°F to +180°F -29°C to +82°C	Nitrile	Orange Stripe	May be specified for petroleum products, hydrocarbons, air with oil vapors, vegetable and mineral oils within the specified temperature range; not compatible for hot dry air over +140°F/+60°C and water over +150°F/+66°C. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.</b>
<b>T</b> <sup>3</sup> (Type A)	-20°F to +180°F -29°C to +82°C	Nitrile	Grey Gasket	May be specified for oil related services, including air with oil vapor, this gasket may be specified for temperatures rated up to +180°F/+82°C. For water related services, this gasket may be specified for temperatures rated up to +150°F/+66°C. For oil free, dry air services, this gasket may be specified for temperatures rated up to +140°F/+60°C. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.</b>
<b>E</b> <sup>4,5</sup> (Type A)	Ambient	EPDM	Violet Stripe	Applicable for wet and dry (oil-free air) sprinkler services only. For dry services, FlushSeal® gaskets may be specified. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.</b>
<b>E2</b>	Ambient	EPDM	Double Green Stripe	UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>
<b>E3</b>	-30°F to +230°F -34°C to +110°C	EPDM	Green and Silver Stripes	May be specified for cold and hot water service within the specific temperature range plus a variety of dilute acids, oil-free air and many chemical services. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>
<b>EPW</b> <sup>6</sup>	-30°F to +180°F -34°C to +82°C	EPDM	Green and Blue Stripes	May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemicals services. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C potable water service and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>

- 1 For specific chemical and temperature compatibility, refer to the [Gasket Chemical Services Guide Long Report \(GSG-100\)](#) located on [victaulic.com](#). The information shown defines general ranges for all compatible fluids.
- 2 The Grade EHP gasket is only available on certain Installation-Ready™ couplings such as the Style 107N, 607 and 177N couplings.
- 3 The Grade T Type A gasket is for use with Style 07, 77, 75 couplings and Style 741 Flange Adapters in marine applications only.
- 4 Vic-Plus™ pre-lubricated gasket.
- 5 The Grade E Type A gasket is only available for Victaulic FireLock products.
- 6 The Grade EPW gasket is only available for AGS (Advanced Grooved System) Couplings sizes 14"/350mm and up.

5.1 SPECIAL GASKETS IPS

Grade	Temp. Range <sup>7</sup>	Compound	Color Code	General Service Guidelines
<b>M2</b>	-40°F to +160°F -40°C to +71°C	Epichlorohydrin	White Stripe	Specially compounded to provide service for common aromatic fuels at low temperatures. Also suitable for certain ambient temperature water services.
<b>V</b>	-30°F to +180°F -34°C to +82°C	Neoprene	Yellow Stripe	May be specified for hot lubricating oils and certain chemicals. Good ozone resistance. Will not support combustion.
<b>O</b>	+20°F to +300°F -7°C to +149°C	Fluoroelastomer	Blue Stripe	May be specified for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.</b>
<b>L</b>	-30°F to +350°F -34°C to +177°C	Silicone	Red Gasket	May be specified for dry heat, air without hydrocarbons to +350°F/+177°C and certain chemical services.
<b>A</b>	+20°F to +180°F -7°C to +82°C	White Nitrile	White Gasket	No carbon black content. Meets FDA requirements. Conforms to CFR Title 21 Part 177.2600. Not compatible for hot water services over +150°F/+66°C or for hot, dry air over +140°F/+60°C. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES.</b>
<b>HMT</b> (T EndSeal <sup>8</sup> )	-20°F to +180°F -29°C to +82°C	Nitrile	Orange and Silver Stripes	Specially compounded with excellent oil resistance and a high modulus for resistance to extrusion. May be specified for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. For maximum gasket life under pressure extremes, temperature should be limited to +120°F/+49°C. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OVER +150°F/+66°C OR FOR HOT, DRY AIR OVER +140°F/+60°C.</b>
<b>T</b> <sup>8</sup> (T-607 EndSeal)	-20°F to +180°F -29°C to +82°C	Nitrile	Grey Gasket	May be specified for petroleum products, hydrocarbons, air with oil vapors, vegetable and mineral oils up to +180°F/+82°C. Also may be specified for hot dry air up to +140°F/+60°C and water up to +150°F/+66°C.
<b>EF</b>	-30°F to +230°F -34°C to +110°C	EPDM	Green "X"	May be specified for hot and cold water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Also meets hot and cold potable water requirements per DVGW, KTW, ÖVGW, SVGW, and French ACS (Crecep), approved for W534, approved for EN681-1 Type WA cold potable, and Type WB hot potable water service. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>
<b>EW</b>	-30°F to +230°F -34°C to +110°C	EPDM	Green "W"	May be specified for hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. WRAS approved material to BS 6920 for cold and hot potable water service up to +149°F/+65°C. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.</b>

7 For specific chemical and temperature compatibility, refer to the [Gasket Chemical Services Guide Long Report \(GSG-100\)](#) located on [victaulic.com](#). The information shown defines general ranges for all compatible fluids.

8 EndSeal Grade "T-607" Nitrile gaskets, for use with HP-70ES couplings, may be specified in systems requiring compliance with API607 fire testing and in foam systems requiring compliance with NFPA 11.

**5.2 COUPLING GASKETS: DUCTILE IRON PIPE SIZE (AWWA)**

Grade	Temp. Range <sup>7</sup>	Compound	Color Code	General Service Guidelines
<b>S</b>	-20°F to +180°F -29°C to +82°C	Nitrile	Orange Stripe	Specially compounded to conform to ductile pipe surfaces. May be specified for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range; not compatible for hot dry air over +140°F/+60°C and water over +150°F/+66°C. <b>NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES.</b>
<b>M</b>	-20°F to +200°F -29°C to +93°C	Halogenated Butyl	Brown Stripe	May be specified for water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Readily conforms to ductile pipe surfaces. UL Classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C potable water systems and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES</b>

<sup>7</sup> For specific chemical and temperature compatibility, refer to the [Gasket Chemical Services Guide Long Report \(GSG-100\)](#) located on [victaulic.com](#). The information shown defines general ranges for all compatible fluids.

6.0 PRESS SEALS FOR VIC-PRESS®



The data provided is intended for use as an aid to qualified designers and specifiers when products are installed in accordance with the latest available Victaulic product line.

Grade	Temp. Range <sup>7</sup>	Compound	Color Code	General Service Guidelines
<b>H</b>	-20°F to +210°F -29°C to +98°C	Hydrogenated Nitrile Butadiene Rubber (HNBR)	Two Orange Stripes	May be specified for hot petroleum/water mixtures, hydrocarbons, air with oil vapors, vegetable and mineral oils, engine oil, transmission oil. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372.
				Standard Seal - Vic-Press products will ship with Grade "H" seal unless otherwise specified on your order
<b>E</b>	-30°F to +250°F -34°C to +121°C	EPDM	Green Stripe	May be specified for hot water service, dilute acids, oil-free air, chemical services. UL Classified in accordance with ANSI/NSF 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and ANSI/NSF 372. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM OR STEAM SERVICES.</b>
<b>O</b>	+20°F to +300°F -7°C to +149°C	Fluoroelastomer	Blue Stripe	May be specified for oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids, and air with hydrocarbons. <b>NOT COMPATIBLE FOR USE WITH HOT WATER OR STEAM SERVICES.</b>

<sup>7</sup> For specific chemical and temperature compatibility, refer to the [Gasket Chemical Services Guide Long Report \(GSG-100\)](#) located on [victaulic.com](#). The information shown defines general ranges for all compatible fluids.

## 7.0 O-RINGS FOR VICTAULIC BOLTED SPLIT SLEEVE

### O-rings

Compound	Temp. Range <sup>7</sup>	Color Code	General Service Guidelines
EPDM	-30°F to +230°F -34°C to +110°C	N/A	Cold and hot water within allowable temperature range; dilute acids; resistant to the deteriorative effects of ozone, oxygen, heat and most chemicals not involving hydrocarbons. <b>NOT COMPATIBLE FOR USE WITH PETROLEUM OR STEAM SERVICES.</b>
Silicone	-30°F to +350°F -34°C to +177°C	N/A	Dry, hot air applications; resistant to many chemicals. <b>NOT COMPATIBLE FOR USE WITH HOT WATER OR STEAM SERVICES.</b>
Isoprene	-40°F to +160°F -40°C to +71°C	N/A	Water; saltwater; sewage; resistant to oxygen and dilute acids.

7 For specific chemical and temperature compatibility, refer to the [Gasket Chemical Services Guide Long Report \(GSG-100\)](#) located on [victaulic.com](#). The information shown defines general ranges for all compatible fluids.

### Gaskets

Compound	Temp. Range <sup>7</sup>	Color Code	General Service Guidelines
Nitrile	-20°F to +180°F -28°C to +82°C	N/A	Water; petroleum products, vegetable and mineral oils; air with oil vapors within allowable temperature.
Fluoroelastomer	+20°F to +300°F -7°C to +149°C	N/A	Resistance to heat and most chemicals.
Neoprene	-30°F to +180°F -34°C to +82°C	N/A	Water and wastewater; resistance to ozone, effects of UV and some oils.

7 For specific chemical and temperature compatibility, refer to the [Gasket Chemical Services Guide Long Report \(GSG-100\)](#) located on [victaulic.com](#). The information shown defines general ranges for all compatible fluids.

## 8.0 GENERAL DEFINITION/ SEAL MATERIAL SELECTION

General Chemical Resistance properties are shown in the following pages for Victaulic elastomer compounds. Unless otherwise noted, temperatures are ambient. For chemicals or combinations not listed please see the full detailed chemical list or contact Victaulic for guidelines.

The data and guidelines presented are based upon the information available resulting from our field experience and laboratory testing and guidelines supplied by prime producers of basic copolymer materials and information furnished by leading molders of rubber products.

Victaulic Grade	ASTM D1418 Designation / Common Name	General Chemical Resistance Properties
<b>EHP</b>	EPDM Ethylene Propylene	Generally resistant to animal and vegetable oils, strong oxidizing chemicals, organic and inorganic acids, cleaning agents, sodium and potassium alkalis, and ozone. Excellent aging characteristics. Poor resistance to petroleum based fluids, mineral oils, solvents, and aromatic hydrocarbons.
<b>E, EA</b>	EPDM Ethylene Propylene	Generally resistant to animal and vegetable oils, strong oxidizing chemicals, organic and inorganic acids, cleaning agents, sodium and potassium alkalis, and ozone. Moderate aging characteristics. Poor resistance to petroleum based fluids, mineral oils, solvents, and aromatic hydrocarbons.
<b>T, A</b>	NBR Nitrile	Generally resistant to aliphatic hydrocarbons, fats, oils, greases, hydraulic fluids, dilute acids, bases, salt solutions, and ethylene glycol fluids. Poor resistance to ozone and polar solvents such as acetone and ketones, esters, ethers, aldehydes, strong acids chlorinated and nitro hydrocarbons.
<b>H</b>	HNBR Hydrogenated Nitrile	Generally resistant to aliphatic hydrocarbons, fats, oils, greases, hydraulic fluids, dilute acids, bases salt solutions, and ethylene glycol fluids. Increased long term temperature resistance beyond NBR. Poor resistance to ozone and highly polar solvents such as acetone and ketones, esters, ethers, aldehydes, strong acids, chlorinated and nitro hydrocarbons.
<b>L</b>	VMQ Silicone	Generally resistant to hot air, animal and vegetable oil and grease, high molecular weight chlorinated aromatic hydrocarbons, dilute salt solutions. Poor resistance to hot water, acids and alkalis, low molecular weight chlorinated hydrocarbons, hydrocarbon based fuels, aromatic hydrocarbons such as benzene and toluene, low molecular weight silicone oils, and brake fluid.



**8.1 GENERAL DEFINITION/ SEAL MATERIAL SELECTION**

Victaulic Grade	ASTM D1418 Designation / Common Name	General Chemical Resistance Properties
<b>V</b>	CR Neoprene	Generally resistant to paraffin based mineral oils, silicone oils, grease, water and water solvents at low temperatures, refrigerants, ammonia, carbon dioxide, silicone ester lubricants, and dilute acids. Limited resistance with Naphthalene based mineral oils, low molecular weight aliphatic hydrocarbons and glycol based brake fluids. Poor resistance with aromatic hydrocarbons, chlorinated hydrocarbons, gasoline, automobile and aircraft brake fluids, and polar solvents such as ketones, esters, and ethers.
<b>M2A2</b>	ECO Epichlorohydrin	Generally high resistance to hydrocarbons, oils, fuels, bio-fuels, and solvents. Exhibits good heat resistance, excellent ozone resistance along with outstanding gas impermeability.
<b>M</b>	Halogenated Butyl	Excellent resistance to weathering, ozone, and heat/hot air. Very good resistance to acidic and basic chemicals. Very low permeability to gases and liquids.
<b>O</b>	FKM Fluoroelastomer	Generally resistant to most acids / chemicals, halogenated hydrocarbons, aliphatic and aromatic hydrocarbon process fluids and chemicals, automotive and aviation fuels, SE and SF engine lubricating oils, Di-Ester lubricants, petroleum oils / fuels, silicone oils / greases. Poor resistance to aqueous fluids, steam, mineral acids, automotive fuels oxygenated with MEOH, ETOH, MTBE, etc. Ketones (MEK), auto / aircraft brake fluids, amines, acetone, Ethyl Acetate, low molecular esters and ethers.

9.0 GENERAL DEFINITION/ SEAL MATERIAL SELECTION

Gasket Chemical Services Guide



**⚠ WARNING**

- The information contained herein is general in nature and recommendations are valid only for Victaulic compounds.
- Gasket compatibility is dependent upon a number of factors. Suitability for a particular application must be determined by a competent individual familiar with system-specific conditions.
- Victaulic offers no warranties, expressed or implied, of a product in any application. Contact your Victaulic sales representative to ensure the best gasket is selected for a particular service.

Failure to follow these instructions could cause system failure, resulting in serious personal injury and property damage.

Report Date: 09/14/2015  
 Revision: GSG-100 6490 Rev.(AA)  
 Project Name:  
 Company:  
 Victaulic Contact:  
 Project Contact:  
 Victaulic email:  
 Project email:  
 Victaulic Phone:  
 Project Phone:

Rating Code Key		Grade E (EPDM)	Grade T (Nitrile)	Grade ST / GRADE H (Hydrogenated Nitrile)	Grade A (White Nitrile)	Grade V (Neoprene)	Grade O (Fluoroelastomer)	Grade M (Halogenated Butyl)	Grade M2 (Epichlorohydrin)	Grade L (Silicone)
1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Acetic Acid, 30%		1	2	2	2	1	3	---	2	1
Acetic Acid, 5%		1	2	2	2	1	3	---	2	1
Acetic Acid, Glacial		1	3	3	3	3	3	---	3	2
Acetic Acid, Hot, High Pressure		3	3	3	3	3	3	---	3	3
Acetone		1	3	3	3	3	3	---	3	3
Acetylene		1	1	1	1	2	1	---	3	3
Ammonia, Aqueous (40% Max)		1	1	1	1	1	2	---	3	1
Animal Oil (Lard Oil)		2	1	1	1	2	1	---	1	2
Argon		1	1	1	1	1	1	---	---	1
Arsenic Acid		1	1	1	1	1	1	---	1	1
ASTM Oil, No. 3		3	1	1	1	3	1	---	---	3
Beer		1	1	1	1	1	1	---	1	1
Benzene		3	3	3	3	3	3	---	3	3
Bromine Anhydrous liquid		3	3	3	3	3	1	---	---	3
Bromine Gas		3	3	3	3	3	2	---	---	3
Butane		3	1	1	1	1	1	---	1	3
Calcium Chloride		1	1	1	1	1	1	---	1	1

The data and recommendations presented are based upon the best information available resulting from a combination of Victaulic's field experience, laboratory testing and recommendations supplied by prime producers of basic copolymer materials. The information presented in this guide is general in scope and specific applications should be discussed with your Victaulic sales representative. In addition, contact Victaulic for recommendations for services, chemicals and/or temperatures not listed.

- Unless otherwise noted, ratings indicated are at an ambient room temperature of ~73°F (22.8°C) and concentrations are 100%
- All gasket recommendations are based on pressure and temperature limitations published by Victaulic
- Gaskets may be affected by combinations of chemicals where the chemicals acting individually may not react
- Cautions should be exercised when working with explosive, inflammable or toxic fluids
- Materials should be subjected to simulated service conditions to determine their suitability for the service intended.

NOTE: Grade H is standard with the Victaulic® Vic-Press™ Schedule 10S system.



9.1 GENERAL DEFINITION/ SEAL MATERIAL SELECTION (Continued)

# Gasket Chemical Services Guide



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**Failure to follow these instructions could cause system failure, resulting in serious personal injury and property damage.**

**Report Date:** 09/14/2015  
**Revision:** GSG-100 6490 Rev.(AA)  
**Project Name:**  
**Company:**  
**Victaulic Contact:**  
**Project Contact:**  
**Victaulic email:**  
**Project email:**  
**Victaulic Phone:**  
**Project Phone:**

Rating Code Key		Grade E (EPDM)	Grade T (Nitrile)	Grade ST / Grade H (Hydrogenated Nitrile)	Grade A (White Nitrile)	Grade V (Neoprene)	Grade O (Fluoroelastomer)	Grade M (Halogenated Butyl)	Grade M2 (Epichlorohydrin)	Grade L (Silicone)
1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Calcium Hydroxide	1	1	1	1	1	1	1	---	1	1
Calcium Hypochlorite	1	2	2	2	3	1	---	3	2	
Cane Sugar Liquors	1	1	1	1	1	1	---	1	1	
Carbon Dioxide, Dry	1	1	1	1	1	1	---	1	3	
Carbon Dioxide, Wet	1	1	1	1	2	1	---	1	3	
Carbon Tetrachloride	3	3	3	3	3	1	---	3	3	
Carbonic Acid	1	1	1	1	1	1	---	1	1	
Castor Oil	2	1	1	1	1	1	---	1	1	
Caustic Potash	1	3	3	3	1	2	---	2	2	
Chloric Acid	1	3	3	3	1	3	---	---	2	
Chlorine Gas (Dry)	3	3	3	3	3	1	---	3	3	
Chlorine Water 50ppm max.	2	3	3	3	3	3	---	---	---	
Chlorine Water 5ppm max.	1	3	3	3	3	3	---	---	---	
Chromic Acid, to 25%	1	3	3	3	3	1	---	---	3	
Citric Acid	1	1	1	1	1	1	---	1	1	
Corn Oil	3	1	1	1	3	1	---	1	1	
Deionized Water (DI Water)	1	1	1	1	1	2	---	---	2	
Diesel Oil	3	1	1	1	3	1	---	1	3	
Diethylene Glycol	1	1	1	1	1	1	---	1	2	
Dipropylene Glycol	1	1	1	1	1	1	---	---	---	
Dowtherm A	3	3	3	3	3	1	---	---	3	
Dowtherm E	3	3	3	3	3	1	---	---	3	
Dowtherm SR-1	1	1	1	1	1	1	---	---	3	
Ethyl Alcohol	1	3	3	3	1	2	---	2	2	
Ethylene Glycol	1	1	1	1	1	1	---	1	1	
Formaldehyde	2	3	3	3	3	3	---	2	2	
Freon 11	3	3	3	3	3	2	---	---	3	



9.2 GENERAL DEFINITION/ SEAL MATERIAL SELECTION (Continued)

# Gasket Chemical Services Guide



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**Failure to follow these instructions could cause system failure, resulting in serious personal injury and property damage.**

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Rating Code Key		Grade E (EPDM)	Grade T (Nitrile)	Grade ST / Grade H (Hydrogenated Nitrile)	Grade A (White Nitrile)	Grade V (Neoprene)	Grade O (Fluoroelastomer)	Grade M (Halogenated Butyl)	Grade M2 (Epichlorohydrin)	Grade L (Silicone)
1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Freon 12	3	2	2	2	2	1	2	---	1	3
Freon 134a	1	1	1	1	1	1	2	---	---	3
Freon 21	3	3	3	3	3	3	3	---	2	3
Freon 22	1	3	3	3	1	3	---	1	3	
Freon, 113	3	1	1	1	1	3	---	1	3	
Freon, 114	1	1	1	1	1	2	---	1	3	
Fuel oil	3	2	2	2	3	1	---	---	3	
Gasoline, Refined Leaded	3	1	1	1	3	1	---	---	3	
Gasoline, Refined Unleaded	3	3	3	3	3	2	---	---	3	
Glucose	1	1	1	1	1	1	---	1	1	
Glycerin/Glycerol	1	1	1	1	1	1	---	1	1	
Glycol	1	1	1	1	1	1	---	1	1	
Hexane or n-Hexane	3	1	1	1	2	1	---	1	3	
Hydrochloric Acid, to 36%, 158°F/70°C	3	3	3	3	3	2	---	3	3	
Hydrochloric Acid, to 36%, 75°F/24°C	2	3	3	3	3	1	---	3	2	
Hydrofluoric Acid, to 36%, 75°F/24°C	3	3	3	3	3	1	---	---	3	
Hydrogen Gas	1	1	1	1	1	1	---	---	3	
Hydrogen Peroxide, 30 - 50%	3	3	3	3	3	1	---	---	2	
Hydrogen Peroxide, 50% - 90%	3	3	3	3	3	3	---	3	2	
Isopropyl Alcohol	1	2	2	2	2	1	1	---	1	
JP-3 (MIL-J-5624)	3	1	1	1	3	1	---	---	3	
JP-4 (MIL-T-5624)	3	1	1	1	3	1	---	---	3	
JP-5 (MIL-T-5624)	3	1	1	1	3	1	---	---	3	
JP-6 (MIL-J-25656)	3	1	1	1	3	1	---	---	3	
JP-8 (MIL-T-83133)	3	1	1	1	3	1	---	---	3	
Kerosene	3	1	1	1	2	1	---	---	3	
Lime and H2O	1	1	1	1	1	3	---	---	3	



9.2 GENERAL DEFINITION/ SEAL MATERIAL SELECTION (Continued)

# Gasket Chemical Services Guide



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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Linseed Oil	3	1	1	1	2	1	---	1	1	
Mercury	1	1	1	1	1	1	---	1	---	
Methane	3	1	1	1	2	1	---	1	3	
Methyl Alcohol, Methanol	1	1	1	1	1	3	---	3	1	
Methyl Ethyl Ketone	1	3	3	3	3	3	---	3	3	
MIL-L-7808F	3	1	1	1	3	1	---	3	3	
Mineral Oils	3	1	1	1	2	1	---	1	2	
Natural Gas	3	1	1	1	1	1	---	1	3	
Nitric Acid to 10%, 75°F/24°C	2	3	3	3	---	1	---	3	2	
Nitric Acid, 10-50%, 75°F/24°C	3	3	3	3	3	1	---	---	3	
Nitric Acid, 50-100%, 75°F/24°C	3	3	3	3	3	3	---	---	3	
Nitric Acid, Red Fuming	3	3	3	3	3	3	---	3	3	
Oil, Motor	3	1	1	1	2	1	---	---	2	
Oil, Sour Crude	3	2	2	2	3	1	---	---	3	
Oxygen, Cold to 70F/21C	2	2	2	2	2	2	---	2	2	
Ozone to 100ppm	1	3	3	3	2	1	---	1	1	
Phenol (Carbolic Acid)	3	3	3	3	3	1	---	---	3	
Phosphate Ester	1	3	3	3	3	3	---	3	3	
Phosphoric Acid 85% to 200°F/93C	3	3	3	3	3	3	---	---	3	
Phosphoric Acid, 45%	1	3	3	3	2	1	---	---	3	
Potassium Chloride	1	1	1	1	1	1	---	1	1	
Potassium Cyanide	1	1	1	1	1	1	---	1	1	
Potassium Fluoride	1	3	3	3	1	3	---	---	2	
Potassium Hydroxide	1	2	2	2	2	3	---	1	3	
Propane Gas	3	1	1	1	2	1	---	1	3	
Propyl Alcohol (Propanol)	1	1	1	1	1	1	---	1	1	
Propylene Glycol	1	1	1	1	1	1	---	---	1	



9.2 GENERAL DEFINITION/ SEAL MATERIAL SELECTION (Continued)

# Gasket Chemical Services Guide



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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Sewage	2	1	1	1	1	2	1	--	--	1
Soap Solutions	1	1	1	1	1	2	1	--	1	1
Soda Ash	1	1	1	1	1	1	1	--	1	1
Sodium Bisulfite	1	1	1	1	1	1	1	--	1	1
Sodium Carbonate (Soda Ash)	1	1	1	1	1	1	1	--	1	1
Sodium Chloride	1	1	1	1	1	1	1	--	1	1
Sodium Cyanide	1	1	1	1	1	1	1	--	1	1
Sodium Hydroxide, 50%	2	2	2	2	2	3	3	--	3	3
Sodium Hypochlorite, 20%	1	3	3	3	3	3	2	--	1	3
Sodium Nitrate	1	2	2	2	2	2	2	--	1	3
Sodium Nitrite	1	2	2	2	2	2	1	--	--	2
Sodium Phosphate, Dibasic	1	1	1	1	1	2	1	--	3	3
Sodium Phosphate, Monobasic	1	1	1	1	1	2	1	--	3	3
Sodium Phosphate, Tribasic	1	1	1	1	1	2	1	--	3	1
Sodium Sulfate	1	1	1	1	1	1	1	--	1	1
Sodium Sulfide	1	1	1	1	1	1	1	--	--	1
Sodium Sulfite	1	1	1	1	1	1	1	--	--	1
Starch	1	1	1	1	1	1	1	--	--	1
Sulfuric Acid, 0 to 25%, 150°F/66°C	1	3	3	3	3	2	1	--	3	3
Sulfuric Acid, 20%-25% Oleum	3	3	3	3	3	3	1	--	3	3
Sulfuric Acid, 25-50%, 200°F/93°C	2	3	3	3	3	3	1	--	3	3
Sulfuric Acid, 50-95%, 150°F/66°C	3	3	3	3	3	3	3	--	3	3
Sulfuric Acid, Fuming	3	3	3	3	3	3	3	--	3	3
Sulfurous Acid	3	3	3	3	3	3	3	--	--	3
Toluene	3	3	3	3	3	3	3	--	3	3
Transmission Fluid, Type A	3	1	1	1	1	3	1	--	1	3
Trisodium Phosphate	1	3	3	3	3	1	1	--	--	2



9.2 GENERAL DEFINITION/ SEAL MATERIAL SELECTION (Continued)

# Gasket Chemical Services Guide



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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Turpentine		3	1	1	1	3	1	---	1	3
Urea		1	3	3	3	3	3	---	---	3
Vegetable Oils		3	1	1	1	3	1	---	1	2
Vinegar		1	2	2	2	2	1	---	---	1
Water, Bromine		2	3	3	3	3	3	---	---	3
Water, Chlorine		2	3	3	3	3	3	---	---	---
Water, to 150°F/66°C		1	1	1	1	2	3	---	3	3
Water, to 200°F/93°C		1	3	1	3	3	3	---	3	3
Water, to 230°F/110°C		1	3	3	3	3	3	---	3	3



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## 10.0 NOTIFICATIONS

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 **CAUTION**

- To ensure maximum product performance for the intended service, always specify the proper elastomer or seal material. Refer to the “Gasket Selection” and Chemical Services” sections located within this document.
- For specific chemical and temperature compatibility, always refer to the “Gasket Chemical Services Guide Long Report” (GSG-100), which can be downloaded at [victaulic.com](http://victaulic.com).

Failure to select and specify the proper elastomer or seal material for the intended service may cause joint failure, resulting in property damage.

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## 11.0 REFERENCE MATERIALS

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[05.02 Victaulic Lubricant MSDS Sheet](#)

[05.02-EU Victaulic Lubricant MSDS Sheet \(Europe Only\)](#)

[05.03 Vic-Plus® MSDS Sheet](#)

[02.06 Potable Water Approvals](#)

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### User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, and the applicable building codes and related regulations as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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### Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

### Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at [www.victaulic.com](http://www.victaulic.com).

### Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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