Seal Selection Guide
Elastomeric 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", Grade "EW" and Grade P gaskets are UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372.

Similarly, Victaulic Grade “M” halogenated butyl gasket material (which is used with Victaulic AWWA sized products) is UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C potable water systems and NSF/ANSI/CAN 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.

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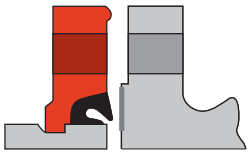
4.0 GASKET/SEAL/O-RING STYLES

Illustrations exaggerated for clarity

Installation-Ready™

Traditional C-Shape

Reducing



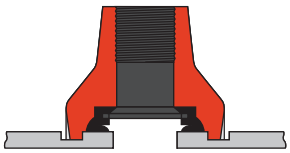
Vic-Flange

FlushSeal™

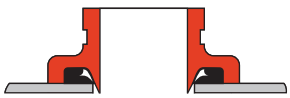
Grooved Copper Tubing with FlushSeal™ Gasket

Advanced Groove System (AGS)

EndSeal™



Outlet



Mechanical-T

IPS to AWWA Transition

AWWA FlushSeal™

Plain End

Plain End for HDPE Pipe

Vic-Press™ for Schedule 10S Stainless Steel

FRP

Victaulic® Bolted Split-Sleeve Products (VBSP)

Shouldered Steel System

Style 809N for Ring Systems

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5.0 GASKETS: EPDM

Grade	Temp. Range[1]	Compound	Color Code[2]	General Service Guidelines
E	–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 NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**
EHP[3,7,8]	–30°F to +250°F –34°C to +120°C	EPDM	Red and Green or Yellow and Green Stripe[7,8]	May be specified for hot water service within the specified temperature range. UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**
E[4,5] (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. Listed/Approved for continuous use in wet and dry systems. Listed/Approved for dry systems at -40˚F/-40˚C and above. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**
E2	Ambient	EPDM	Double Green Stripe	UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**
E3	–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. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**
EF[6]	–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 W270, UBA Elastomer Guideline, ÖVGW, SVGW, and French ACS approved for EN681-1 Type WA cold potable, and Type WB hot potable water service. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**
EW	–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 NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES OR STEAM SERVICES.**

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 When supplied for use with CTS and Australian Standard copper, Gasket Grades "E," "EHP" and "T" will feature a copper color stripe in addition to the color code listed in this chart.

3 The Grade "EHP" gasket is only available on certain Installation-Ready™ couplings such as the Styles 107V and 177N, as well as limited applications of the Style 607 rigid coupling for CTS copper and the Style 606-AS rigid coupling for Australian Standard copper.

4 Vic-Plus™ pre-lubricated gasket.

5 The Grade "E" Type A gasket is only available with Victaulic FireLock™ products.

6 Available only in Europe.

7 When supplied with gaskets that require field applied lubrication, the color marking will be Red and Green.

8 Optional Red and Green Stripes.

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5.1 GASKETS: NITRILE

Grade	Temp. Range[9]	Compound	Color Code[10]	General Service Guidelines
T	–20°F to +180°F –29°C to +82°C	Nitrile	Orange Stripe	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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**
T[11] (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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**
HMT[12] High Modulus Nitrile	–20°F to +180°F –29°C to +82°C	Nitrile	Orange and Silver or Orange and Yellow Stripes[12,14]	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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**
T[13] (T-607 EndSeal™)	–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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**

9 For specific chemical and temperature compatibilty, 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.

10 When supplied for use with CTS and Australian Standard copper, Gasket Grades "E," "EHP" and "T" will feature a copper color stripe in addition to the color code listed in this chart.

11 The Grade "T" Type A gasket is for use with Style 07, 77, 75 couplings and Style 741 Flange Adapters in compliance with ISO 19921:2005(E) for marine applications only.

12 When supplied with gaskets that require field applied lubrication, the color marking will be Orange and Silver.

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

14 Optional Orange and Silver Stripes.

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5.2 GASKETS: OTHER

Grade	Temp. Range [15]	Compound	Color Code	General Service Guidelines
M2	–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.
V	–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.
L	–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.
A	+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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES.**
O	+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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES OR STEAM SERVICES.**
CHP-2	Contact Victaulic for more information.	Fluoroelastomer	Yellow and Copper Stripes	May be specified for hot water service plus varying concentrations of hot petroleum/water mixtures, hydrocarbons, halogenated hydrocarbons, air with oil vapors, vegetable and mineral oils, oxidizing acids, strongly alkaline and aggressive fluids and automotive fluids such as engine oil and transmission oil within the specified temperature range. UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH STEAM SERVICES.**
P	0°F to +180°F -18°C to +82°C	Fluoroelastomer Blend	Double Blue Stripes[16]	UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. May be specified for hot water service within the specified temperature range. Specifically formulated for compatibility with potable water systems. Optimized for improved resistance to chlorine, chloramine and other typical potable water disinfectants. **NOT COMPATIBLE FOR USE WITH STEAM SERVICES.**

[15] For specific chemical and temperature compatibilty, 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.

[16] When supplied for use with CTS copper tubing, the Grade "P" gasket will feature Red and Blue stripes.

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5.3 GASKETS: DUCTILE IRON PIPE SIZE (AWWA)

Grade	Temp. Range [17]	Compound	Color Code	General Service Guidelines
S	–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. **NOT COMPATIBLE FOR USE WITH HOT WATER SERVICES.**
M	–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 NSF/ANSI/CAN 61 for cold +73°F/+23°C potable water systems and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM SERVICES**

[17] For specific chemical and temperature compatibilty, 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.

5.4 SEAL: ASSEMBLY

Description	Temp. Range	Compound	Color Code	General Service Guidelines
Spring Energized PTFE	-20°F to +388°F -29°C to +198°C	PTFE	Tan Gasket	Suitable for saturated steam and condensate services within the specified temperature range, plus a variety of chemical services.

NOTE

- For more information on the PTFE seal, please reference publication 05.10: Victaulic Chemical Compatibility Guide for the Style 870 High Performance Rigid Coupling Seal Assembly.

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6.0 PRESS SEALS: 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[18]	Compound	Color Code	General Service Guidelines
H	–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, hyrdocarbons, air with oil vapors, vegetable and mineral oils, engine oil, transmission oil. UL Classified in accordance with NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service.
	Standard Seal - Vic-Press™ products will ship with Grade "H" seal unless otherwise specified on your order			
E	–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 NSF/ANSI/CAN 61 for cold +73°F/+23°C and hot +180°F/+82°C potable water service and NSF/ANSI/CAN 372. **NOT COMPATIBLE FOR USE WITH PETROLEUM OR STEAM SERVICES.**
O	+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. **NOT COMPATIBLE FOR USE WITH HOT WATER OR STEAM SERVICES.**

[18] For specific chemical and temperature compatibilty, 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.

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7.0 O-RINGS AND GASKETS: BOLTED SPLIT SLEEVE

O-Rings

Compound	Temp. Range [19]	General Service Guidelines
EPDM	-30°F to +230°F -34°C to +110°C	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. **NOT COMPATIBLE FOR USE WITH PETROLEUM OR STEAM SERVICES.**
Silicone	-30°F to +350°F -34°C to +177°C	Dry, hot air applications; resistant to many chemicals. **NOT COMPATIBLE FOR USE WITH HOT WATER OR STEAM SERVICES.**
Isoprene	-40°F to +160°F -40°C to +71°C	Water; saltwater; sewage; resistant to oxygen and dilute acids.

[19] For specific chemical and temperature compatibilty, 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 [20]	General Service Guidelines
Nitrile	-20°F to +180°F -28°C to +82°C	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	Resistance to heat and most chemicals.
Neoprene	-30°F to +180°F -34°C to +82°C	Water and wastewater; resistance to ozone, effects of UV and some oils.

[20] For specific chemical and temperature compatibilty, 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.

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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.

ASTM D1418 Designation/ Common Name	General Chemical Resistance Properties
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.
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.
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.
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.
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.
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.
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.

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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:	10/18/2019
Revision:	GSG-100 6490 Rev.(AA)
Project Name:	
Company:	
Victaulic Contact:	
Project Contact:	
Victaulic email:	
Project email:	
Victaulic Phone:	
Project Phone:	

Rating Code Key	
1	Most Applications
2	Limited Applications
3	Restricted Applications
---	Insufficient Data

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

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9.1 GENERAL DEFINITION/SEAL MATERIAL SELECTION (Continued)

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:	10/18/2019
Revision:	GSG-100 6490 Rev.(AA)
Project Name:	
Company:	
Victaulic Contact:	
Project Contact:	
Victaulic email:	
Project email:	
Victaulic Phone:	
Project Phone:	

Rating Code Key	
1	Most Applications
2	Limited Applications
3	Restricted Applications
---	Insufficient Data

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

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9.2 GENERAL DEFINITION/SEAL MATERIAL SELECTION (Continued)

Gasket Chemical Services Guide

⚠WARNING

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

Report Date:	10/18/2019
Revision:	GSG-100 6490 Rev.(AA)
Project Name:	
Company:	
Victaulic Contact:	
Project Contact:	
Victaulic email:	
Project email:	
Victaulic Phone:	
Project Phone:	

Rating Code Key	
1	Most Applications
2	Limited Applications
3	Restricted Applications
---	Insufficient Data

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

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9.2 GENERAL DEFINITION/SEAL MATERIAL SELECTION (Continued)

Gasket Chemical Services Guide

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Rating Code Key	
1	Most Applications
2	Limited Applications
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---	Insufficient Data

Chemical	Grade E (EPDM)	GRADE T (Nitrile)	GRADE ST / GRADE H (Hydrogenated Nitrile)	GRADE A (White Nitrile)	GRADE V (Neoprene)	GRADE M (Halogenated Butyl)	GRADE M2 (Epichlorohydrin)	GRADE L (Silicone)	GRADE CHP-2 (Fluoroelastomer)	GRADE O (Fluoroelastomer)
Methane	3	1	1	1	2	---	1	3	1	1
Methyl Alcohol, Methanol	1	1	1	1	1	---	3	1	3	3
Methyl Ethyl Ketone	1	3	3	3	3	---	3	3	3	3
MIL-L-7808F	3	1	1	1	3	---	3	3	1	1
Mineral Oils	3	1	1	1	2	---	1	2	1	1
Natural Gas	3	1	1	1	1	---	1	3	1	1
Nitric Acid to 10%, 75°F/24°C	2	3	3	3	---	---	3	2	2	1
Nitric Acid, 10-50%, 75°F/24°C	3	3	3	3	3	---	---	3	3	1
Nitric Acid, 50-100%, 75°F/24°C	3	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	---	---	2	1	1
Oil, Sour Crude	3	2	2	2	3	---	---	3	3	1
Oxygen, Cold to 70F/21C	2	2	2	2	2	---	2	2	2	2
Ozone to 100ppm	1	3	3	3	2	---	1	1	1	1
Phenol (Carbolic Acid)	3	3	3	3	3	---	---	3	1	1
Phosphate Ester	1	3	3	3	3	---	3	3	3	3
Phosphoric Acid 85% to 200°F/93C	3	3	3	3	3	---	---	3	3	3
Phosphoric Acid, 45%	1	3	3	3	2	---	---	3	1	1
Potassium Chloride	1	1	1	1	1	---	1	1	1	1
Potassium Cyanide	1	1	1	1	1	---	1	1	1	1
Potassium Fluoride	1	3	3	3	1	---	---	2	1	1
Potassium Hydroxide	1	2	2	2	2	---	1	3	3	3
Propane Gas	3	1	1	1	2	---	1	3	1	1
Propyl Alcohol (Propanol)	1	1	1	1	1	---	1	1	1	1
Propylene Glycol	1	1	1	1	1	---	---	1	1	1
Sewage	2	1	1	1	2	---	---	1	1	1
Soap Solutions	1	1	1	1	2	---	1	1	1	1

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9.2 GENERAL DEFINITION/SEAL MATERIAL SELECTION (Continued)

Gasket Chemical Services Guide

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Project Name:	
Company:	
Victaulic Contact:	
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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	3	---	3	3	3	3
Sodium Hypochlorite, 20%	2	3	3	3	3	---	2	3	2	2
Sodium Nitrate	1	2	2	2	2	---	1	3	1	1
Sodium Nitrite	1	2	2	2	2	---	---	2	---	1
Sodium Phosphate, Dibasic	1	1	1	1	2	---	3	3	1	1
Sodium Phosphate, Monobasic	1	1	1	1	2	---	3	3	1	1
Sodium Phosphate, Tribasic	1	1	1	1	2	---	3	1	1	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
Sulfuric Acid, 0 to 25%, 150°F/66°C	1	3	3	3	2	---	3	3	1	1
Sulfuric Acid, 20%-25% Oleum	3	3	3	3	3	---	3	3	1	1
Sulfuric Acid, 25-50%, 200°F/93°C	2	3	3	3	3	---	3	3	2	1
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	3	---	1	3	1	1
Trisodium Phosphate	1	3	3	3	1	---	---	2	---	1
Turpentine	3	1	1	1	3	---	1	3	1	1
Urea	1	3	3	3	3	---	---	3	3	3

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9.2 GENERAL DEFINITION/SEAL MATERIAL SELECTION (Continued)

Gasket Chemical Services Guide

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Vegetable Oils	3	1	1	1	3	---	1	2	1	1
Vinegar	1	2	2	2	2	---	---	1	1	1
Water, Bromine	2	3	3	3	3	---	---	3	3	3
Water, Chlorine	2	3	3	3	3	---	---	---	3	3
Water, to 150°F/66°C	1	1	1	1	2	---	3	3	1	3
Water, to 200°F/93°C	1	3	1	3	3	---	3	3	1	3
Water, to 230°F/110°C	1	3	3	3	3	---	3	3	1	3

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10.0 NOTIFICATIONS

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.**

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

11.0 REFERENCE MATERIALS

02.06: Victaulic Potable Water Approvals ANSI/NSF

05.02: Victaulic Lubricant MSDS Sheet

05.02-EU: Victaulic Lubricant MSDS Sheet (Europe Only)

05.03: Victaulic Vic-Plus™ MSDS Sheet

05.10: Victaulic Chemical Compatibility Guide for the Style 870 High Performance Rigid Coupling Seal Assembly

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 hanbook 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.

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

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