

Seal Selection Guide

ELASTOMETRIC SEAL CONSTRUCTION

This seal selection guide is separated into four discrete sections: Gasket Seals for Couplings, Press Seals for Vic-Press®, Valve Seals for Valves, and General Definition/Seal Material Selection.



SECTION A: GASKET SEALS FOR COUPLINGS

The grooved piping concept is simple and reliable. The coupling housing performs several functions as an integral part of the pipe joint. It contains the gasket, which is fully enclosed, reinforcing and securing it in position for proper sealing. The housing also engages on the pipe around the full pipe circumference and creates a unified joint while providing the advantages of mechanical joining.

The sealing efficiency of Victaulic gaskets is such that the gasket forms an initial seal as it is stretched over the pipe ends. As the housing segments are tightened, the resilient elastomeric gasket conforms to the internal cavity of the housing, further enhancing the gasket's seal against the pipe, both in pressure and vacuum conditions. The Victaulic gasket is pressure responsive, providing increased sealing action as the internal pressure is increased. The combination of these characteristics creates a permanent, leak-tight triple seal on a variety of piping materials including steel, stainless steel, aluminum, PVC, ductile iron and copper.

The gasket is molded to fit the internal cavity of the housing. Upon placement of the housing around the gasket and into the grooves, the gasket is positioned.

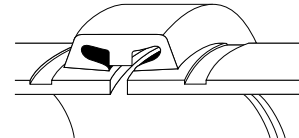
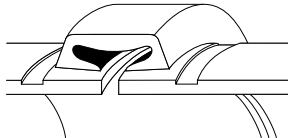
UNIQUE PRESSURE RESPONSIVE GASKET FORMS A TRIPLE SEAL



C-SHAPED GASKET



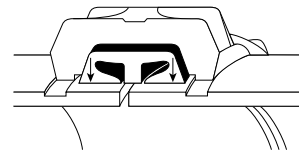
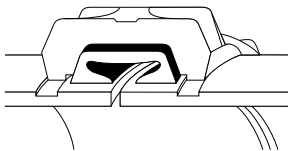
FLUSHSEAL® GASKET



SEALS BETWEEN THE PIPE ENDS AND THE GROOVE.

The gasket is then slightly compressed as the housings are tightened to secure the gasket lips in a firm seat on the pipe, between the grooves and the pipe ends.

Line pressure serves to strengthen the seal through the combination of normal gasket resilience, housing reinforcement and the action of pressure downward on the lips.



SEAL IS ENHANCED BY PRESSURE OR VACUUM IN THE LINE

JOB/OWNER

System No. _____

Location _____

CONTRACTOR

Submitted By _____

Date _____

ENGINEER

Spec Sect _____ Para _____

Approved _____

Date _____

Seal Selection Guide

SECTION A: GASKET SEALS FOR COUPLINGS

GASKET SEAL DATA

Victaulic offers a variety of synthetic elastomeric gasket seals to provide the option of grooved piping products for the widest range of applications. To assure the maximum life for the service intended, proper gasket selection and specification in ordering is essential.

Many factors must be considered in determining the optimum gasket seal for a specific service. The foremost consideration is temperature, along with concentration of product, duration of service, and continuity of service. Temperatures beyond the recommended limits have a degrading effect on the polymer. Therefore, there is a direct relationship between temperature, continuity of service, and gasket life.

Services listed are General Service Recommendations for each of the three associated product areas. It should be noted that there are services for which these gasket seals are **not recommended**. Reference should always be made to the General Chemical Resistance Properties for each Victaulic gasket Grade for specific service recommendations and for a listing of services which are **not recommended**. Furthermore, Victaulic gaskets are also developed according to housing roles, i.e. the design of the housing and to a given percent seal compression.

Gasket recommendations apply only to Victaulic gasket seals. Recommendations 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 clearly marked as part of the mold with the gasket size, style, and associated compound for easy identification.

POTABLE WATER

Grade "E" EPDM, Grade "E" Vic-Plus™, Grade "EHP", Grade "EHP" Vic-Plus, Grade "E2" and Grade "EW" gaskets were submitted to Underwriters' Laboratories, Inc. for evaluation in potable water applications. EPDM material was tested to the requirements of ANSI/NSF 61 (Drinking Water System Components - Health Effects). Successful completion of this testing allows us to state that our EPDM gasket material is UL classified in accordance with ANSI/NSF 61 for cold (+86°F/+30°C) and hot (+180°F/+82°C) potable water service.

Similarly, Victaulic Grade "M" halogenated butyl gasket material (which is typically used with Victaulic AWWA sized products) has also been UL classified in accordance with ANSI/NSF 61 for cold (+86°F/+30°C) potable water service.

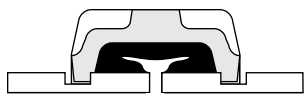
The data provided is intended for use as an aid to qualified designers when products are installed in accordance with the latest available Victaulic product line.

Seal Selection Guide

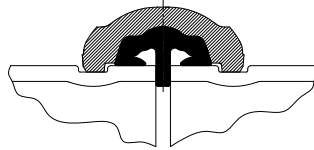
SECTION A: GASKET SEALS FOR COUPLINGS

Gasket Styles

ILLUSTRATIONS EXAGGERATED FOR CLARITY



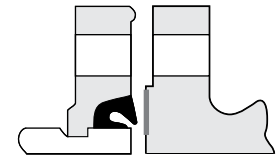
Standard



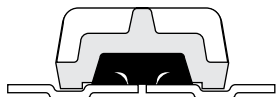
Installation-Ready



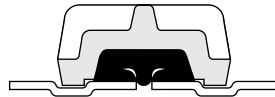
Reducing



Vic-Flange



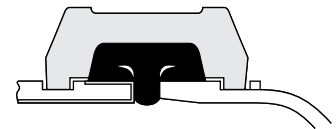
FlushSeal



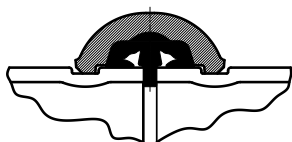
Grooved Copper
Tubing with
FlushSeal Gasket



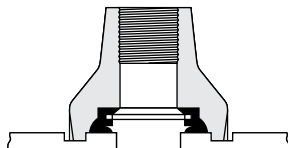
Advanced Groove
System (AGS)



EndSeal



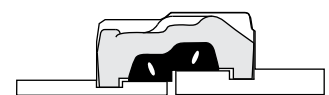
FireLock EZ



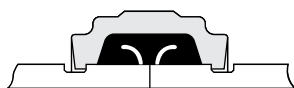
Outlet



Mechanical-T



IPS to AWWA
Transition



AWWA FlushSeal



Plain End



Plain End Piping
System for HDPE Pipe

Seal Selection Guide

SECTION A: GASKET SEALS FOR COUPLINGS

GASKET SEAL SELECTION GUIDE

⚠ WARNING

- To assure maximum life for the service intended, proper gasket selection and specification in ordering is essential. For specific chemical and temperature compatibility, refer to the Gasket Selection and Chemical Services sections. The information shown defines general ranges for all compatible fluids.

Failure to select the proper rubber compound may result in personal injury or property damage, improper installation, joint leakage or joint failure.

STANDARD GASKET SEALS IPS

Grade	Temp. Range*	Compound	Color Code	General Service Recommendations
E	-30°F to +230°F -34° C to +110° C	EPDM	Green Stripe	Recommended 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 +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.
EHP €	-30°F to +250°F -34°C to +120°C	EPDM	Red & Green Stripes	Recommended for hot water service within the specified temperature range. UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES
T	-20°F to +180°F -29° C to +82° C	Nitrile	Orange Stripe	Recommended for petroleum products, hydrocarbons, air with oil vapors, vegetable and mineral oils within the specified temperature range; not recommended for hot dry air over +140°F/+60°C and water over +150°F/+66°C. NOT RECOMMENDED FOR HOT WATER SERVICES.
E [†] (Type A)	Ambient	EPDM	Violet Stripe	Applicable for wet and dry (oil-free air) sprinkler services only. For dry services, Victaulic continues to recommend the use of FlushSeal® gaskets. NOT RECOMMENDED FOR HOT WATER SERVICES.
E2	Ambient	EPDM	Double Green Stripe	UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

† Vic-Plus gasket.

* For specific chemical and temperature compatibility, please refer to either the short or full version Gasket Chemical Services Guide. The information shown defines general ranges for all compatible fluids.

€ The Grade EHP gasket is only available on Style 107, 607 and 177 couplings.

Seal Selection Guide

SECTION A: GASKET SEALS FOR COUPLINGS

SPECIAL GASKETS IPS

Grade	Temp. Range*	Compound	Color Code	General Service Recommendations
M2	-40°F to +160°F -40° C to +71° C	Epichlorohydrin	White Stripe	Specially compounded to provide superior 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	Recommended for hot lubricating oils and certain chemicals. Good oxidation resistance. Will not support combustion.
O	+20°F to +300°F -7° C to +149° C	Fluoro-elastomer	Blue Stripe	Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids and air with hydrocarbons. NOT RECOMMENDED FOR HOT WATER SERVICES.
L	-30°F to +350°F -34° C to +177° C	Silicone	Red Gasket	Recommended 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. May be used for food. Meets FDA requirements. Conforms to CFR Title 21 Part 177.2600. Not recommended for hot water services over +150°F/+66°C or for hot, dry air over +140°F/+60°C. NOT RECOMMENDED FOR HOT WATER SERVICES.
HMT (T EndSeal®)	-20°F to +150°F -29° C to +66° C	Nitrile	Orange & Silver Stripes	Specially compounded with excellent oil resistance and a high modulus for resistance to extrusion. Temperature Range -20°F/-29°C to +150°F/+66°C. Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range. Not recommended for hot water services over +150°F/+66°C or for hot, dry air over +140°F/+60°C. For maximum gasket life under pressure extremes, temperature should be limited to +120°F/+49°C.

* For specific chemical and temperature compatibility, please refer to either the short or full version Gasket Chemical Services Guide. The information shown defines general ranges for all compatible fluids.

Seal Selection Guide

SECTION A: GASKET SEALS FOR COUPLINGS

SPECIAL GASKETS IPS

Grade	Temp. Range*	Compound	Color Code	General Service Recommendations
EF	-30° F to +230° F -34° C to +110° C	EPDM	Green "X"	Recommended 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. NOT RECOMMENDED FOR PETROLEUM SERVICES.
EW	-30° F to +230° F -34° C to +110° C	EPDM	Green "W"	Recommended 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 to ANSI/NSF 61 for cold +86° F/+30° C and hot +180° F/+82° C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

* For specific chemical and temperature compatibility, please refer to either the short or full version Gasket Chemical Services Guide. The information shown defines general ranges for all compatible fluids.

SPECIAL GASKETS AWWA

Grade	Temp. Range*	Compound	Color Code	General Service Recommendations
S	-20° F to +180° F -29° C to +82° C	Nitrile	Orange Stripe	Specially compounded to conform to ductile pipe surfaces. Recommended for petroleum products, air with oil vapors, vegetable and mineral oils within the specified temperature range; not recommended for hot dry air over +140° F/+60° C and water over +150° F/+66° C. NOT RECOMMENDED FOR HOT WATER SERVICES.
M	-20° F to +200° F -29° C to +93° C	Halogenated Butyl	Brown Stripe	Recommended 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 service. NOT RECOMMENDED FOR PETROLEUM SERVICES.

* For specific chemical and temperature compatibility, please refer to either the short or full version Gasket Chemical Services Guide. The information shown defines general ranges for all compatible fluids.

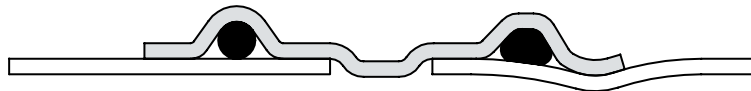
Seal Selection Guide

SECTION B: PRESS SEALS FOR VIC-PRESS



Vic-Press® for Schedule 10S, Type 304/304(L) and Type 316/316(L) stainless steel pipe provides a fast, easy, clean, and reliable means for joining small size ASTM A-312 Schedule 10S stainless steel pipe. Vic-Press for Schedule 10S products meet ASME requirements and ratings for ANSI Class 150 systems for water, oil, gases and general chemical services as depicted in the General Service Recommendations shown below. FM Approved.

PATENT-PENDING PRESS DETECTION TECHNOLOGY PROVIDES FOR EASY IDENTIFICATION OF UNPRESSED JOINTS AS A SYSTEM IS BEING PRESSURIZED



The press seal is compressed as the housing is pressed, creating a leak tight seal rated to 500psi/3450kPa

Grade	Temp. Range*	Compound	Color Code	General Service Recommendations
H	-20° F to +210° F -29° C to +98° C	Hydrogenated Nitrile Butadiene Rubber (HNBR)	Two Orange Stripes	Recommended for hot petroleum/water mixtures, hydrocarbons, air with oil vapors, vegetable and mineral oils, engine oil, transmission oil. ANSI/NSF 61 Annex G Certified for potable water up to 180° F/82° C.
				Standard Seal- Vic-Press products will ship with Grade "H" seal unless otherwise specified on order.
E	-30° F to +250° F -34° C to +121° C	EPDM	Green Stripe	Recommended for hot water service, dilute acids, oil-free air, chemical services. NOT RECOMMENDED FOR PETROLEUM or STEAM SERVICES. ANSI/NSF 61 Annex G Certified for potable water up to 180° F/82° C.
O	+20° F to +300° F +6° C to +149° C	Fluoro-elastomer	Blue Stripe	Recommended for oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids, and air with hydrocarbons. NOT RECOMMENDED FOR HOT WATER OR STEAM SERVICES.

⚠ WARNING

- Vic-Press for Schedule 10S products for Types 304 and 316 stainless steel must only be used on services compatible with seal and fitting materials.
- Incompatible services may result in leakage. Always reference the latest Victaulic Seal Selection Guide (05.01) for specific seal service recommendations.

Seal Selection Guide

SECTION C: PRIMARY ELASTOMERIC SEALS FOR VALVES



The following seal materials are offered for Victaulic valves for chemical services as depicted in the General Service Recommendations shown below. Please consult with Victaulic for availability.

Grade	Temp. Range*	Compound	Valve Series Number	General Service Recommendations
E	-30° F to +230° F -34° C to +110° C	EPDM	317, 365, 700, 7A2, 7B2, 702, 712, 712S, 713, 716, 716H, 717, 717H, 717HR, 717R, 751, 768, 769, 779	Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Certain valves using this Grade are UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.
	-30° F to +180° F -34° C to +82° C		W709, W715, 771F, 771H, 772F, 772H	
EV	-30°F to +230°F -34° C to +110° C	EPDM	761, SC761, W761	Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Certain valves using this Grade are UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.
E3	-30°F to +250°F -34° C to +121° C	EPDM	705, 707C, 765, 766	Recommended for cold and hot water service within the specified temperature range plus a variety of dilute acids, oil-free air and many chemical services. Certain valves using this Grade are UL classified in accordance with ANSI/NSF 61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service. NOT RECOMMENDED FOR PETROLEUM SERVICES.
TA	-20°F to +180°F -29° C to +82° C	Nitrile	317, 365, 608, 700, 712, 712S, 713, 716, 716H, 717H, 717HR, 765, 779, 2950	Recommended for petroleum products, air with oil vapors, oil-free gas, vegetable and mineral oils within the specified temperature range. NOT RECOMMENDED FOR HOT WATER SERVICES OVER +150°F/+66°C OR FOR HOT DRY AIR OVER +140°F/+60°C.
TV	-20°F to +180°F -29° C to +82° C	Nitrile	761, SC761, W761	Recommended for petroleum products, air with oil vapors, oil-free gas, vegetable and mineral oils within the specified temperature range. NOT RECOMMENDED FOR HOT WATER SERVICES OVER +150°F/+66°C OR FOR HOT DRY AIR OVER +140°F/+60°C.

* For specific chemical and temperature compatibility, please refer to either the short or full version Gasket Chemical Services Guide. The information shown defines general ranges for all compatible fluids.

Seal Selection Guide

SECTION C: PRIMARY ELASTOMERIC SEALS FOR VALVES

The following seal materials are offered for Victaulic valves for chemical services as depicted in the General Service Recommendations shown below. Please consult with Victaulic for availability.

Grade	Temp. Range*	Compound	Valve Series Number	General Service Recommendations
T3	-20°F to +180°F -29° C to +82° C	Nitrile	705, 707C, 765, 766	Recommended for petroleum products, air with oil vapors, oil-free gas, vegetable and mineral oils within the specified temperature range. NOT RECOMMENDED FOR HOT WATER SERVICES OVER +150°F/+66°C OR FOR HOT DRY AIR OVER +140°F/+60°C.
O	+40°F to +230°F -4° C to +110° C	Fluoro-elastomer	317, 365, 712, 712S, 713, 716, 716H, 779	Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids. NOT RECOMMENDED FOR HOT WATER SERVICES.
OV	+20°F to +250°F -7° C to +121° C	Fluoro-elastomer	761, SC761, W761	Recommended for many oxidizing acids, petroleum oils, halogenated hydrocarbons, lubricants, hydraulic fluids, organic liquids. NOT RECOMMENDED FOR HOT WATER SERVICES.
V	-30°F to +180°F -34° C to +82° C	Neoprene	317, 365	Recommended for hot lubricating oils and certain chemicals. Good oxidation resistance. Will not support combustion.
CHP	+40°F to +230°F +4° C to +110° C	Fluoro-elastomer	608	Recommended for cold and hot water service within the specified temperature range plus a variety of acids, bases, petroleum oils, lubricants, hydraulic fluids and air with hydrocarbons. UL classified in accordance with ANSI/NSF61 for cold +86°F/+30°C and hot +180°F/+82°C potable water service.

* For specific chemical and temperature compatibility, please refer to either the short or full version Gasket Chemical Services Guide. The information shown defines general ranges for all compatible fluids.

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION SUBSECTION 1

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 recommendations.

The data and recommendations presented are based upon the best information available resulting from our field experience and laboratory testing. In addition, we have incorporated the recommendations supplied by prime producers of basic copolymer materials and information furnished by leading molders of rubber products.

The information presented in this guide is general in scope and should be used only with this full knowledge and understanding. In unusual, critical or severe services, full information should be referred to Victaulic, such as non-ambient operating temperatures or highly concentrated solutions.

Where possible, materials should be subjected to simulated service conditions to determine their suitability for the service intended. Furthermore, it should not be concluded that, in instances where a liner is not affected by several substances used alone, their combination will have no reaction on the liner. Caution should be exercised with explosive, inflammable or toxic fluids. All gasket recommendations are based on pressure and temperature limitations published by Victaulic. Borderline services always should be verified by Victaulic.

Victaulic Grade	ASTM Designation / Common Name	Composition	General Chemical Resistance Properties
EHP	EPDM Ethylene Propylene	Ethylene-propylene-diene-monomer	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.
E, EA	EPDM Ethylene Propylene	Ethylene-propylene-diene-monomer	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.
T, A	NBR Nitrile	Butadiene Acrylonitrile Copolymer	Generally resistant to aliphatic hydrocarbons, fats, oils, greases, hydraulic fluids, dilute acids, bases, salt solutions, and ethylene glycol fluids. Poor resistance to ozone and highly polar solvents such as acetone and ketones, esters, ethers, aldehydes, strong acids chlorinated and nitro hydrocarbons.
H, ST	HNBR Hydrogenated Nitrile	Highly Saturated Nitrile Hydrogenated Acrylonitrile Butadiene	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.
L	VMQ Silicone	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.

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION SUBSECTION 1

Victaulic Grade	ASTM Designation / Common Name	Composition	General Chemical Resistance Properties
V	CR Neoprene	Chloroprene copolymer	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.
M2A2	ECO Epichlorohydrin	Polyepichlorohydrin copolymer	Generally high resistance to hydrocarbons, oils, fuels, bio-fuels, and solvents. Exhibits good heat resistance, excellent ozone resistance along with outstanding gas impermeability.
M	Halogenated Butyl	Chlorinated Isobutylene-isoprene copolymer	Excellent resistance to weathering, ozone, and heat/hot air. Very good resistance to acidic and basic chemicals. Very low permeability to gases and liquids.
O	FKM Fluoroelastomer	Bisphenol cureable copolymer	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 (Ammonia), acetone, Ethyl Acetate, hot water, low molecular esters and ethers.
CHP	TFE/P Fluoroelastomer	Fluorinated Copolymer	Excellent heat resistance and exceptional chemical resistance to strong acids and bases, phosphate esters, amines, engine oils, hydraulic and brake fluids, pulp and paper liquors, and hot water. Poor resistance to aromatic fuels, chlorinated hydrocarbons, and ketones.

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION
SUBSECTION 2

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.

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 Gas	3	3	3	3	3	2	---	---	3	
Bromine Water	2	3	3	3	3	3	---	---	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.

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION
SUBSECTION 2

Gasket Chemical Services Guide



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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	
Carbolic Acid (Phenol)	2	3	3	3	3	1	---	3	3	
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	
Castor Oil	2	1	1	1	1	1	---	1	1	
Caustic Potash	1	3	3	3	1	2	---	2	2	
Chloric Acid to 20%	1	3	3	3	2	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	

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION
SUBSECTION 2

Gasket Chemical Services Guide



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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Freon 12		3	2	2	2	1	2	---	1	3
Freon 134a		1	1	1	1	1	2	---	---	3
Freon 21		Contact a Victaulic Sales Representative								
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 (conc.) Cold		Contact a Victaulic Sales Representative								
Hydrogen Gas		1	1	1	1	1	1	---	---	3
Hydrogen Peroxide, 0 - 30%		3	3	3	3	3	1	---	---	2
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

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION
SUBSECTION 2

Gasket Chemical Services Guide



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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Lime and H2O	1	1	1	1	1	1	3	---	---	3
Linseed Oil	3	1	1	1	2	1	---	1	1	1
Mercury	1	1	1	1	1	1	---	1	---	---
Methane	3	1	1	1	2	1	---	1	3	3
Methyl Alcohol, Methanol	1	1	1	1	1	3	---	3	1	1
Methyl Ethyl Ketone	1	3	3	3	3	3	---	3	3	3
MIL-L-7808F	3	1	1	1	3	1	---	3	3	3
Mineral Oils	3	1	1	1	2	1	---	1	2	2
Natural Gas	3	1	1	1	1	1	---	1	3	3
Nitric Acid to 10%, 75°F/24°C	2	3	3	3	---	1	---	3	2	2
Nitric Acid, 10-50%, 75°F/24°C	3	3	3	3	3	1	---	---	3	3
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	3
Oil, Motor	3	1	1	1	2	1	---	---	2	2
Oil, Sour Crude	3	2	2	2	3	1	---	---	3	3
Oxygen, Cold to 70F/21C	1	2	2	2	1	1	---	2	1	1
Ozone to 100ppm	1	3	3	3	2	1	---	1	1	1
Phenol (Carbolic Acid)	3	3	3	3	3	1	---	---	3	3
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	1	---	---	3	3
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	3	---	---	2	2
Potassium Hydroxide	1	2	2	2	2	3	---	1	3	3
Propane Gas	3	1	1	1	2	1	---	1	3	3
Propyl Alcohol (Propanol)	1	1	1	1	1	1	---	1	1	1

Seal Selection Guide

SECTION D: GENERAL DEFINITION/ SEAL MATERIAL SELECTION
SUBSECTION 2

Gasket Chemical Services Guide



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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Propylene Glycol	1	1	1	1	1	1	1	---	---	1
Sea Water, salinity ~ 3.5%	1	1	1	1	---	3	---	---	---	1
Sewage	2	1	1	1	2	1	---	---	---	1
Soap Solutions	1	1	1	1	2	1	---	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 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%	1	3	3	3	3	2	---	1	3	3
Sodium Nitrate	1	2	2	2	2	2	---	1	3	3
Sodium Nitrite	1	2	2	2	2	1	---	---	2	2
Sodium Phosphate, Dibasic	1	1	1	1	2	1	---	3	3	3
Sodium Phosphate, Monobasic	1	1	1	1	2	1	---	3	3	3
Sodium Phosphate, Tribasic	1	1	1	1	2	1	---	3	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	1
Sulfuric Acid, 0 to 25%, 150°F/66°C	1	3	3	3	2	1	---	3	3	3
Sulfuric Acid, 20%-25% Oleum	3	3	3	3	3	1	---	3	3	3
Sulfuric Acid, 25-50%, 200°F/93°C	2	3	3	3	3	1	---	3	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	3	1	---	1	3	3

Seal Selection Guide

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1	Most Applications									
2	Limited Applications									
3	Restricted Applications									
---	Insufficient Data									
Chemical										
Trisodium Phosphate		1	3	3	3	1	1	---	---	2
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

Seal Selection Guide

COMPLETE GASKET CHEMICAL SERVICE GUIDE

For a complete listing of chemical compatibility codes by elastometric seal material please refer to document GSG-100 found on our website at www.victaulic.com/longreport

WARRANTY

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

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 I-100 Victaulic Field Installation Handbook for the product you are installing. Handbooks are included with each shipment of Victaulic products for complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

For complete contact information, visit www.victaulic.com

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