

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Abietic Acid	A	A	A	A	A	A	A	A	-	A	-	-	-
Acetaldehyde	A	A	A	A	A	A	A	A	C	C	C	C	B
Acetamide	A	A	A	A	A	A	A	A	A	C	A	C	B
Acetic Acid (Crude, Glacial, Pure)	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	B ¹	B ¹	B ¹	B ¹	B ¹
Acetic Anhydride	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	B ¹	B ¹	B ¹	B ¹	B ¹
Acetone	A	A	A	A	A	A	A	A	C	B	C	B	A
Acetonitrile	A	A	A	A	A	A	A	A	C	-	C	-	B
Acetophenone	A	A	A	A	A	A	A	A	C	C	C	C	B
2-Acetylaminofluorene	A	A	A	A	A	A	A	A	C	C	C	C	C
Acetylene	A	A	A	A	A	A	A	A	A	B	A	B	A
Acrolein	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	B ¹	C	B ¹	C	B ¹
Acrylamide	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C
Acrylic Acid	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	B ¹
Acrylic Anhydride	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	-	-	-	-	-
Acrylonitrile	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C
Air - 150°F and below	A	A	A	A	A	A	A	A	A	A	A	A	A
Air - 150°F - 300°F	A	A	A	A	A	A	A	A	B	B	B	B	B
Allyl Acetate	A	A	A	A	A	A	A	A	C	C	C	C	B
Allyl Chloride	A	A	A	B	B	A	A	A	C	C	C	C	B
Allyl Methacrylate	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C
Aluminum Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A
Aluminum Fluoride	C	-	A	C	C	A	A	A	C	C	C	C	C
Aluminum Hydroxide (solid)	A	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Nitrate	A	A	A	A	A	A	-	-	B	B	B	B	B
Aluminum Sulfate	A	A	A	B	B	A	A	A	A	A	A	A	A
Alums	A	A	A	B	B	A	A	A	A	A	A	A	A
4-Aminodiphenyl	A	A	A	A	A	A	A	A	C	C	C	C	C
Ammonia Gas, 150°F and below	A	A	A	A	A	A	A	A	A	A	A	A	A
Ammonia Gas, 150°F and above	A	A	A	A	A	A	A	A	C	C	C	B	B
Ammonia Liquid, Anhydrous	A	A	A	A	A	A	A	A	B	-	B	-	A
Ammonium Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A
Ammonium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Nitrate	A	A	A	A	A	A	-	-	B	B	B	B	B
Ammonium Phosphate, Monobasic	A	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Phosphate, Dibasic	A	A	A	A	A	A	A	A	A	A	A	A	A

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number													
	GYLON®													
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700	
Ammonium Phosphate, Tribasic	A	A	A	A	A	A	A	A	A	A	A	A	A	
Ammonium Sulfate	A	A	B	B	B	A	A	A	A	A	A	A	A	
Amyl Acetate	A	A	A	A	A	A	A	C	C	C	C	C	B	
Amyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	
Aniline, Aniline Oil	A	A	A	A	A	A	A	C	C	C	C	C	B	
Aniline Dyes	A	A	A	A	A	A	A	C	B	C	B	B	B	
o-Anisidine	A	A	A	A	A	A	A	C	C	C	C	C	C	
Aqua Regia	A	A	A	B	B	A	C	C	C	C	C	C	C	
Aroclors	A	A	A	A	A	A	A	C	C	C	C	C	C	
Asphalt	A	A	A	A	A	A	A	A	C	A	C	B	C	
Aviation Gasoline	A	A	A	A	A	A	A	B	C	B	C	B	C	
Barium Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A	
Barium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	A	
Barium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A	A	
Baygon	A	A	A	A	A	A	A	C	C	C	C	-	-	
Beer ¹⁰	A	A	A	A	A	A	A	A	A	A	A	A	A	
Benzaldehyde	A	A	A	A	A	A	A	C	C	C	C	C	B	
Benzene, Benzol	A	A	A	A	A	A	A	C	C	C	C	C	C	
Benzidine	A	A	A	A	A	A	A	C	C	C	C	C	-	
Benzoic Acid	A	A	A	A	A	A	A	B	B	B	B	B	B	
Benzonitrile	A	A	A	A	A	A	A	C	-	C	-	-	C	
Benzotrichloride	A	A	A	C	C	A	A	C	C	C	C	C	C	
Benzoyl Chloride	A	A	A	-	-	A	A	C	-	C	-	C	C	
Benzyl Alcohol	A	A	A	A	A	A	A	C	-	C	-	B	B	
Benzyl Chloride	A	A	A	-	-	A	A	C	C	C	C	C	B	
Bio-diesel (B100)	A	A	A	A	A	A	A	A	A	A	A	-	-	
Biphenyl	A	A	A	B	B	A	A	C	C	C	C	C	C	
Bis(2-chloroethyl)ether	A	A	A	-	-	A	A	C	C	C	C	C	C	
Bis(chloromethyl)ether	A	A	A	-	-	A	A	C	C	C	C	C	B	
Bis(2-ethylhexyl)phthalate	A	A	A	A	A	A	A	C	C	C	C	C	B	
Bitumen	A	A	A	A	A	A	A	A	C	A	C	B	C	
Black Sulfate Liquor	C	B	A	C	A	A	A	C	C	C	C	C	C	
Blast Furnace Gas	A	A	A	A	A	A	A	B	C	B	C	B	C	
Bleach (Sodium Hypochlorite)	A	A	A	B	B	A	-	C	-	C	-	C	C	
Boiler Feed Water	A	A	A	A	A	A	A	A	A	A	A	A	A	

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Borax	A	A	A	A	A	A	A	A	A	A	A	A	A
Boric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A
Brake Fluid (Mineral Oil)	A	A	A	A	A	A	A	A	C	A	C	-	C
Brake Fluid (Glycol Ether)	A	A	A	A	A	A	A	-	-	-	-	-	A
Brine (Sodium Chloride)	A	A	A	B	B	A	A	A	A	A	A	A	A
Bromine	A	A	A	C	C	A	-	C	C	C	C	C	C
Bromine Trifluoride	C	C	C	C	C	C	C	C	C	C	C	C	C
Bromoform	A	A	A	A	A	A	A	C	C	C	C	C	C
Bromomethane	A	A	A	A	A	A	A	C	C	C	C	C	C
Butadiene	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	-	C
Butane	A	A	A	A	A	A	A	A	C	A	C	B	C
2-Butanone	A	A	A	A	A	A	A	C	C	C	C	C	C
Butyl Acetate	A	A	A	A	A	A	A	C	C	C	C	C	B
Butyl Alcohol, Butanol	A	A	A	A	A	A	A	A	A	A	A	A	A
n-Butyl Amine	A	A	A	A	A	A	A	B	-	B	-	C	B
tert-Butyl Amine	A	A	A	A	A	A	A	B	-	B	-	C	B
Butyl Methacrylate	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Butyric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Bisulfite	A	A	A	A	A	A	A	B	-	B	-	B	C
Calcium Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A
Calcium Cyanamide	A	A	A	A	A	A	A	B	B	B	B	B	B
Calcium Hydroxide	-	A	A	-	A	A	A	A	A	A	A	A	A
Calcium Hypochlorite	A	A	A	B	B	A	-	B	B	C	C	C	C ²
Calcium Nitrate	A	A	A	-	-	A	C	-	-	-	-	-	-
Calflo AF	A	A	A	A	A	A	A	A	C	A	C	-	C
Calflo FG	A	A	A	A	A	A	A	A	C	A	C	-	C
Calflo HTF	A	A	A	A	A	A	A	A	C	A	C	-	C
Calflo LT	A	A	A	A	A	A	A	A	C	A	C	-	C
Cane Sugar Liquors	A	A	A	A	A	A	A	A	A	A	A	A	A
Caprolactam	A	A	A	A	A	A	A	C	C	C	C	C	B
Captan	A	A	A	A	A	A	A	C	C	C	C	C	C
Carbaryl	A	A	A	A	A	A	A	C	C	C	C	C	C
Carbolic Acid, Phenol	A	A	A	A	A	A	A	C	C	C	C	C	B
Carbon Dioxide, Dry	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Dioxide, Wet	A	A	A	A	A	A	A	A	A	A	A	A	A

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number													
	GYLON®													
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700	
Carbon Disulfide	A	A	A	A	A	A	A	C	C	C	C	C	C	
Carbon Monoxide	A	A	A	A	A	A	A	B	B	B	B	B	B	
Carbon Tetrachloride	A	A	A	B	B	A	A	C	C	C	C	C	C	
Carbonic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	
Carbonyl Sulfide	A	A	A	-	-	A	A	C	C	C	C	C	C	
Castor Oil	A	A	A	A	A	A	A	A	C	A	C	B	B	
Catechol	A	A	A	A	A	A	A	C	B	C	B	-	-	
Caustic Soda	C	B	A ⁶	C	A ⁶	A ¹¹	A ⁶	C	C	C	C	C	C	
Cetane (Hexadecane)	A	A	A	A	A	A	A	A	C	A	C	B	C	
China Wood Oil	A	A	A	A	A	A	A	A	C	A	C	B	C	
Chloramben	A	A	A	-	-	A	A	C	C	C	C	C	C	
Chlorazotic Acid (Aqua Regia)	A	A	A	B	B	A	C	C	C	C	C	C	C	
Chlordane	A	A	A	-	-	A	A	C	C	C	C	C	C	
Chlorinated Solvents, Dry	A	A	A	A	A	A	A	C	C	C	C	C	C	
Chlorinated Solvents, Wet	A	A	A	C	C	A	A	C	C	C	C	C	C	
Chlorine, Dry	A	A	A	A	A	A	A	-	-	-	-	-	-	
Chlorine, Wet	A	A	A	C	C	A	A	C	C	C	C	C	C	
Chlorine Dioxide	A	A	A	-	-	A	C	C	C	C	C	C	C	
Chlorine Trifluoride	C	C	C	C	C	C	C	C	C	C	C	C	C	
Chloroacetic Acid	A	A	A	C	C	A	A	C	B	C	B	C	B	
2-Chloroacetophenone	A	A	A	B	B	A	A	C	C	C	C	C	C	
Chloroazotic Acid (Aqua Regia)	A	A	A	B	B	A	C	C	C	C	C	C	C	
Chlorobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C	
Chlorobenzilate	A	A	A	-	-	A	A	C	C	C	C	C	C	
Chloroethane	A	A	A	A	A	A	A	C	C	C	C	C	C	
Chloroethylene	A	A	A	A	A	A	A	C	C	C	C	C	C	
Chloroform	A	A	A	A	A	A	A	C	C	C	C	C	C	
Chloromethyl Methyl Ether	A	A	A	-	-	A	A	C	C	C	C	C	C	
Chloronitrous Acid (Aqua Regia)	A	A	A	B	B	A	C	C	C	C	C	C	C	
Chloroprene	A	A	A	B	B	A	A	C	C	C	C	C	C	
Chlorosulfonic Acid	A	A	A	-	-	A	-	C	C	C	C	C	C	
Chrome Plating Solutions	⁻⁵	⁻⁵	A	⁻⁵	B	A	A	C	C	C	C	C	C	
Chromic Acid	A	A	A	B	B	A	C	C	C	C	C	C	C	
Chromic Anhydride	A	A	A	B	B	A	C	C	C	C	C	C	C	
Chromium Trioxide	A	A	A	B	B	A	C	C	C	C	C	C	C	

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Citric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A
Coke Oven Gas	A	A	A	A	A	A	A	B	C	B	C	B	C
Copper Chloride	A	A	A	C	C	A	A	A	A	A	A	A	A
Copper Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A
Corn Oil ¹⁰	A	A	A	A	A	A	A	A	C	A	C	B	B
Cotton Seed Oil ¹⁰	A	A	A	A	A	A	A	A	C	A	C	B	B
Creosote	A	A	A	A	A	A	A	B	C	B	C	B	C
Cresols, Cresylic Acid	A	A	A	A	A	A	A	C	C	C	C	C	C
Crotonic Acid	A	A	A	-	-	A	A	C	C	C	C	C	C
Crude Oil	A	A	A	B	B	A	A	A	B	A	B	B	C
Crude Oil, Sour	A	A	A	B	B	A	A	B	C	B	C	B	C
Cumene	A	A	A	A	A	A	A	C	C	C	C	C	C
Cyclohexane	A	A	A	A	A	A	A	A	C	A	C	B	C
Cyclohexanone	A	A	A	A	A	A	A	C	C	C	C	C	B
2,4-D, Salts and Esters	A	A	A	-	-	A	A	C	C	C	C	C	C
Detergent Solutions	B ¹³	B ¹³	A	A	A	A	A	B ¹³	B ¹³	B ¹³	B ¹³	B ¹³	B ¹³
Diazomethane	A	A	A	A	A	A	A	-	-	-	-	-	-
Dibenzofuran	A	A	A	A	A	A	A	C	C	C	C	C	C
Dibenzylether	A	A	A	A	A	A	A	C	C	C	C	C	C
1,2-Dibromo-3-chloropropane	A	A	A	B	B	A	A	C	C	C	C	C	C
Dibromoethane	A	A	A	A	A	A	A	C	C	C	C	C	C
Dibutyl Phthalate	A	A	A	A	A	A	A	C	C	C	C	C	B
Dibutyl Sebacate	A	A	A	A	A	A	A	C	C	C	C	C	B
o-Dichlorobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
1,4-Dichlorobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
3,3-Dichlorobenzidene	A	A	A	-	-	A	A	C	C	C	C	C	C
Dichloroethane (1,1 or 1,2)	A	A	A	A	A	A	A	C	C	C	C	C	C
1,1-Dichloroethylene	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Dichloroethyl Ether	A	A	A	-	-	A	A	C	C	C	C	C	C
Dichloromethane	A	A	A	A	A	A	A	C	C	C	C	C	C
1,2-Dichloropropane	A	A	A	A	A	A	A	C	C	C	C	C	C
1,3-Dichloropropene	A	A	A	B	B	A	A	C	C	C	C	C	C
Dichlorvos	A	A	A	B	B	A	A	C	C	C	C	C	C
Diesel Oil / Fuel	A	A	A	A	A	A	A	A	B	A	B	B	C
Diethanolamine	A	A	A	A	A	A	A	B	B	B	B	B	B

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number													
	GYLON®													
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700	
N,N-Diethylaniline	A	A	A	-	-	A	A	C	C	C	C	C	C	
Diethyl Carbonate	A	A	A	-	-	A	A	C	-	C	-	C	-	
Diethyl Sulfate	A	A	A	A	A	A	A	C	C	C	C	-	C	
3,3-Dimethoxybenzidene	A	A	A	A	A	A	A	C	C	C	C	-	-	
Dimethylamine	A	A	A	A	A	A	A	B	B	B	B	-	B	
Dimethylaminoazobenzene	A	A	A	A	A	A	A	-	-	-	-	-	-	
N,N-Dimethyl Aniline	A	A	A	-	-	A	A	C	C	C	C	C	C	
3,3-Dimethylbenzidine	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dimethyl Carbamoyl Chloride	A	A	A	C	C	A	A	C	C	C	C	C	C	
Dimethyl Ether	A	A	A	A	A	A	A	B	C	B	C	B	B	
Dimethylformamide	A	A	A	-	-	A	A	C	C	C	C	C	C	
Dimethyl Hydrazine, Unsymmetrical	A	A	A	A	A	A	A	C	B	C	B	B	B	
Dimethyl Phthalate	A	A	A	A	A	A	A	C	C	C	C	C	B	
Dimethyl Sulfate	A	A	A	A	A	A	A	C	C	C	C	-	C	
4,6-Dinitro-o-Cresol and Salts	A	A	A	A	A	A	A	C	C	C	C	C	C	
2,4-Dinitrophenol	A	A	A	-	-	A	A	C	C	C	C	C	C	
2,4-Dinitrotoluene	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dioxane	A	A	A	A	A	A	A	C	C	C	C	C	B	
1,2-Diphenylhydrazine	A	A	A	A	A	A	A	C	B	C	B	-	-	
Diphyl DT	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowfrost	A	A	A	A	A	A	A	B	B	B	B	-	B	
Dowfrost HD	A	A	A	A	A	A	A	B	B	B	B	-	B	
Dowtherm 4000	A	A	A	A	A	A	A	B	B	B	B	B	B	
Dowtherm A	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowtherm E	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowtherm G	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowtherm HT	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowtherm J	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowtherm Q	A	A	A	A	A	A	A	C	C	C	C	C	C	
Dowtherm SR-1 (ethylene glycol)	A	A	A	A	A	A	A	A	A	A	A	A	A	
Epichlorohydrin	A	A	A	A	A	A	A	C	C	C	C	C	B	
E85 (85% Ethanol, 15% Gas)	A	A	A	A	A	A	A	A	A	A	A	-	-	
1,2-Epoxybutane	A	A	A	A	A	A	A	-	C	-	C	C	C	
Ethane ¹⁰	A	A	A	A	A	A	A	A	B	A	B	B	C	
Ethanol, Ethyl Alcohol ¹⁰	A	A	A	A	A	A	A	A	A	A	A	A	A	

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Ethers	A	A	A	A	A	A	A	B	C	B	C	B	B
Ethyl Acetate	A	A	A	A	A	A	A	C	C	C	C	C	C
Ethyl Acrylate	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	B1
Ethyl Alcohol ¹⁰	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethylbenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
Ethyl Carbamate	A	A	A	A	A	A	A	C	C	C	C	B	B
Ethyl Cellulose	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethyl Chloride	A	A	A	A	A	A	A	C	C	C	C	C	C
Ethyl Ether	A	A	A	A	A	A	A	B	C	B	C	B	B
Ethyl Hexoate	A	A	A	A	A	A	A	C	-	C	-	-	B
Ethylene	A	A	A	A	A	A	A	A	B	A	B	B	C
Ethylene Bromide	A	A	A	A	A	A	A	C	C	C	C	C	C
Ethylene Dibromide	A	A	A	A	A	A	A	C	C	C	C	C	C
Ethylene Dichloride	A	A	A	A	A	A	A	C	C	C	C	C	C
Ethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethyleneimine	-	-	A	-	-	A	A	C	C	C	C	C	C
Ethylene Oxide	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Ethylene Thiourea	A	A	A	A	A	A	A	-	-	-	-	C	C
Ethylidene Chloride	A	A	A	A	A	A	A	C	C	C	C	C	C
Exhaust, Engine/Combustion	-	-	-	-	-	-	-	B	B	B	B	B	B
Ferric Chloride	A	A	A	C	C	A	A	A	A	B	B	B	B4
Ferric Phosphate	A	A	A	-	-	A	A	B	B	B	B	B	B
Ferric Sulfate	A	A	A	B	B	A	A	A	A	A	A	A	A
Fluorine, Gas	-	-	-	-	-	A ¹⁴	C	C	C	C	C	C	C
Fluorine, Liquid	-	-	-	C	C	-	C	C	C	C	C	C	C
Fluorine Dioxide	C	C	C	C	C	C	C	C	C	C	C	C	C
Formaldehyde	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	B ¹	A ¹	B ¹	B ¹	A ¹
Formic Acid	A	A	A	B	B	A	A	C	-	C	-	B	B
Fuel Oil	A	A	A	A	A	A	A	A	B	A	B	B	C
Fuel Oil, Acid	A	A	A	A	A	A	A	A	B	A	B	B	C
Furfural	A	A	A	A	A	A	A	C	C	C	C	B	B
Gasoline, Refined	A	A	A	A	A	A	A	A	C	A	B	B	C
Gasoline, Sour	A	A	A	A	A	A	A	A	C	A	B	B	C
Gelatin	A	A	A	A	A	A	A	A	A	A	A	A	A
Glucose	A	A	A	A	A	A	A	A	A	A	A	A	A

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Glue, Protein Base	A	A	A	A	A	A	A	A	A	A	A	A	A
Glycerine, Glycerol	A	A	A	A	A	A	A	A	A	A	A	A	A
Glycol	A	A	A	A	A	A	A	A	A	A	A	A	A
Grain Alcohol ¹⁰	A	A	A	A	A	A	A	A	A	A	A	A	A
Grease, Petroleum Base	A	A	A	A	A	A	A	A	C	A	C	-	C
Green Sulfate Liquor	C	B	A	-	A	A	A	C	C	C	C	C	C
Heptachlor	A	A	A	-	-	A	A	C	C	C	C	C	C
Heptane	A	A	A	A	A	A	A	A	C	A	C	B	C
Hexachlorobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
Hexachlorobutadiene	A	A	A	A	A	A	A	C	C	C	C	C	C
Hexachlorocyclopentadiene	A	A	A	A	A	A	A	C	C	C	C	C	C
Hexachloroethane	A	A	A	-	-	A	A	C	C	C	C	C	C
Hexadecane	A	A	A	A	A	A	A	A	C	A	C	B	C
Hexamethylene Diisocyanate	A	A	A	A	A	A	A	-	C	-	C	-	C
Hexamethylphosphoramide	A	A	A	A	A	A	A	-	C	-	C	-	-
Hexane	A	A	A	A	A	A	A	A	C	A	C	B	C
Hexone	A	A	A	A	A	A	A	C	C	C	C	C	B
Hydraulic Oil, Mineral	A	A	A	A	A	A	A	A	B	A	B	B	C
Hydraulic Oil, Synthetic (Phosphate Esters)	A	A	A	A	A	A	A	C	C	C	C	C	B
Hydrazine	A	A	A	A	A	A	A	C	B	C	B	B	B
Hydrobromic Acid	A	A	A	C	C	A	A	C	C	C	C	C	C
Hydrochloric Acid	A	A	A	C	C	A	A	C	C	C	C	C	C
Hydrocyanic Acid	A	A	A	A	A	A	A	A	B	A	B	B	A
Hydrofluoric Acid, Anhydrous	C	C	C	C	C	A	A	C	C	C	C	C	C
HF Acid, Less than 65%, Above 150°F	C	C	A	C	C	A	A	C	C	C	C	C	C
HF Acid, 65% to Anhydrous, Above 150°F	C	C	-	C	C	A	A	C	C	C	C	C	C
HF Acid, Up to Anhydrous, 150°F & below	C	C	A	C	C	A	A	C	C	C	C	C	C
Hydrofluorosilicic Acid	C	C	A	C	C	A	A	C	C	C	C	C	C
Hydrofluosilicic Acid	C	C	A	C	C	A	A	C	C	C	C	C	C
Hydrogen	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrogen Bromide	A	A	A	-	-	A	A	C	C	C	C	C	C
Hydrogen Fluoride, Up to 150°F	C	C	C	C	C	A	A	C	C	C	C	C	C
Hydrogen Peroxide, 10%	A	A	A	A	A	A	A	B	B	B	B	B	B
Hydrogen Peroxide, 10-90%	A	A	A	B	B	A	C	B	-	B	-	C	B
Hydrogen Sulfide, Dry or Wet	A	A	A	A	A	A	A	B	B	B	B	B	B

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Hydroquinone	A	A	A	A	A	A	A	C	B	C	B	C	C
Iodine Pentafluoride	-	-	-	-	-	-	C	C	C	C	C	C	C
Iodomethane	A	A	A	A	A	A	A	C	C	C	C	B	-
Isobutane	A	A	A	A	A	A	A	A	C	A	C	B	C
Isooctane	A	A	A	A	A	A	A	A	C	A	C	B	C
Isophorone	A	A	A	A	A	A	A	C	C	C	C	C	B
Isopropyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A
Jet Fuels (A, B and JP4 thru JP8)	A	A	A	A	A	A	A	A	C	A	C	B	C
Jet Fuels (JP9 and JP10)	A	A	A	A	A	A	A	C	C	C	C	C	C
Kerosene	A	A	A	A	A	A	A	A	C	A	C	B	C
Lacquer Solvents	A	A	A	A	A	A	A	C	C	C	C	C	C
Lacquers	A	A	A	A	A	A	A	C	C	C	C	C	C
Lactic Acid, 150°F and below	A	A	A	A	A	A	A	A	A	A	A	A	A
Lactic Acid, Above 150°F	A	A	A	A	A	A	A	-	-	-	-	-	-
Lime Saltpeter (Calcium Nitrates)	A	A	A	-	-	A	C	B	B	B	B	B	B
Lindane	A	A	A	B	B	A	A	C	C	C	C	C	C
Linseed Oil	A	A	A	A	A	A	A	A	B	A	B	A	B
Liquified Petroleum Gas (LPG)	A	A	A	A	A	A	A	A	B	A	B	B	C
Lithium Bromide	A	A	A	A	A	A	A	A	-	A	-	A	A
Lithium, Elemental	C	C	C	C	C	C	C	C	C	C	C	C	C
Lubricating Oils, Refined	A	A	A	A	A	A	A	A	B	A	B	B	C
Lubricating Oils, Mineral or Petroleum Types	A	A	A	A	A	A	A	A	B	A	B	B	C
Lubricating Oils, Sour	A	A	A	A	A	A	A	B	B	B	B	B	C
Lye	C	B	A ⁶	C	A ⁶	A ¹¹	A ⁶	C	C	C	C	C	C
Magnesium Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A
Magnesium Hydroxide	A	A	A	A	A	A	A	B	B	B	B	B	B
Magnesium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A
Maleic Acid	A	A	A	A	A	A	A	B	B	B	B	B	A
Maleic Anhydride	A	A	A	A	A	A	A	C	-	C	-	C	C
Mercuric Chloride	A	A	A	C	C	A	A	A	A	A	A	B	A
Mercury	A	A	A	A	A	A	A	A	A	A	A	A	A
Methane	A	A	A	A	A	A	A	A	B	A	C	B	C
Methanol, Methyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A
Methoxychlor	A	A	A	A	A	A	A	C	C	C	C	C	C
Methylacrylic Acid	A	A	A	-	-	A	A	C	C	C	C	C	C

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number													
	GYLON®													
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700	
Methyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	
2-Methylaziridine	-	-	A	-	-	A	A	C	C	C	C	C	C	
Methyl Bromide	A	A	A	A	A	A	A	C	C	C	C	C	C	
Methyl Chloride	A	A	A	B	B	A	A	C	C	C	C	C	C	
Methyl Chloroform	A	A	A	A	A	A	A	C	C	C	C	C	C	
4, 4 Methylene Bis (2-chloroaniline)	A	A	A	-	-	A	A	C	C	C	C	C	C	
Methylene Chloride	A	A	A	A	A	A	A	C	C	C	C	C	C	
4, 4 Methylene Dianiline	A	A	A	A	A	A	A	C	C	C	C	C	C	
Methylene Diphenyldiisocyanate	A	A	A	-	-	A	A	C	C	C	C	C	-	
Methyl Ethyl Ketone	A	A	A	A	A	A	A	C	C	C	C	C	C	
Methyl Hydrazine	A	A	A	A	A	A	A	C	B	C	B	B	B	
Methyl Iodide	A	A	A	A	A	A	A	C	C	C	C	B	-	
Methyl Isobutyl Ketone (MIBK)	A	A	A	A	A	A	A	C	C	C	C	C	B	
Methyl Isocyanate	A	A	A	A	A	A	A	-	C	-	C	-	-	
Methyl Methacrylate	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C	
N-Methyl-2-Pyrrolidone	A	A	A	A	A	A	A	C	B	C	B	-	-	
Methyl Tert. Butyl Ether (MTBE)	A	A	A	A	A	A	A	B	C	B	B	C	C	
Milk ¹⁰	A	A	A	A	A	A	A	A	A	A	A	A	A	
Mineral Oils	A	A	A	A	A	A	A	A	B	A	B	B	C	
Mobiltherm 600	A	A	A	A	A	A	A	A	C	A	C	-	C	
Mobiltherm 603	A	A	A	A	A	A	A	A	C	A	C	-	C	
Mobiltherm 605	A	A	A	A	A	A	A	A	C	A	C	-	C	
Mobiltherm Light	A	A	A	A	A	A	A	C	C	C	C	C	C	
Molten Alkali Metals	C	C	C	C	C	C	C	C	C	C	C	C	C	
Monomethylamine	A	A	A	A	A	A	A	C	B	C	B	A	B	
MultiTherm 100	A	A	A	A	A	A	A	A	C	A	C	B	C	
MultiTherm 503	A	A	A	A	A	A	A	A	C	A	C	-	C	
MultiTherm IG-2	A	A	A	A	A	A	A	A	C	A	C	B	C	
MultiTherm PG-1	A	A	A	A	A	A	A	A	C	A	C	B	C	
Muriatic Acid	A	A	A	C	C	A	A	C	C	C	C	C	C	
Naphtha	A	A	A	A	A	A	A	A	C	A	C	B	C	
Naphthalene	A	A	A	A	A	A	A	C	C	C	C	C	C	
Naphthols	A	A	A	-	-	A	A	-	-	-	-	-	-	
Natural Gas	A	A	A	A	A	A	A	A	B	A	B	B	B	
Nickel Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A	

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Nickel Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A
Nitric Acid, Less than 30%	A	A	A	A	A	A	C	C	C	C	C	C	C
Nitric Acid, Above 30%	A	A	A	A	A	A	C	C	C	C	C	C	C
Nitric Acid, Crude	A	A	A	-	-	A	C	C	C	C	C	C	C
Nitric Acid, Red Fuming	A	A	A	B	B	A	C	C	C	C	C	C	C
Nitrobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
4-Nitrobiphenyl	A	A	A	A	A	A	A	C	C	C	C	C	C
2-Nitro-Butanol	A	A	A	-	-	A	-	C	-	C	-	C	-
Nitrocalcite (Calcium Nitrate)	A	A	A	-	-	A	C	B	B	B	B	B	B
Nitrogen	A	A	A	A	A	A	A	A	A	A	A	A	A
Nitrogen Tetroxide	A	A	A	-	-	A	-	C	C	C	C	C	C
Nitrohydrochloric Acid (Aqua Regia)	A	A	A	B	B	A	C	C	C	C	C	C	C
Nitromethane	A	A	A	A	A	A	A	C	-	C	-	C	-
2-Nitro-2-Methyl Propanol	A	A	A	-	-	A	-	C	-	C	-	C	-
Nitromuriatic Acid (Aqua Regia)	A	A	A	B	B	A	C	C	C	C	C	C	C
4-Nitrophenol	A	A	A	-	-	A	A	C	C	C	C	C	C
2-Nitropropane	A	A	A	A	A	A	A	C	-	C	-	C	C
N-Nitrosodimethylamine	A	A	A	A	A	A	A	B	B	B	B	-	-
N-Nitroso-N-Methylurea	A	A	A	-	-	A	A	-	-	-	-	-	-
N-Nitrosomorpholine	A	A	A	A	A	A	A	C	-	C	-	C	-
Norge Niter (Calcium Nitrate)	A	A	A	-	-	A	C	B	B	B	B	B	B
Norwegian Saltpeter (Calcium Nitrate)	A	A	A	-	-	A	C	B	B	B	B	B	B
N-Octadecyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	-	A
Octane	A	A	A	A	A	A	A	A	C	A	C	B	C
Oil, Petroleum	A	A	A	A	A	A	A	A	B	A	B	B	C
Oils, Animal & Vegetable ¹⁰	A	A	A	A	A	A	A	A	C	A	C	B	B
Oleic Acid	A	A	A	A	A	A	A	B	-	B	-	C	C
Oleum	A	-	C	C	C	A	-	C	C	C	C	C	C
Orthodichlorobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
Oxalic Acid	A	A	A	B	B	A	A	C	-	C	-	B	B
Oxygen, Gas	SEE NOTE 7							C	C	C	C	C	C
Ozone	SEE NOTE 7							C	C	C	C	C	C
Palmitic Acid	A	A	A	A	A	A	A	A	B	A	B	B	A
Paraffin	A	A	A	A	A	A	A	A	B	A	B	B	C
Paratherm HE	A	A	A	A	A	A	A	A	C	A	C	B	C

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Paratherm NF	A	A	A	A	A	A	A	A	C	A	C	-	C
Parathion	A	A	A	A	A	A	A	A	C	C	C	C	C
Paraxylene	A	A	A	A	A	A	A	A	C	C	C	C	C
Pentachloronitrobenzene	A	A	A	-	-	A	A	A	C	C	C	C	C
Pentachlorophenol	A	A	A	A	A	A	A	A	C	C	C	C	C
Pentane	A	A	A	A	A	A	A	A	A	C	A	C	B
Perchloric Acid	A	A	A	C	C	A	C	A	C	C	C	C	C
Perchloroethylene	A	A	A	A	A	A	A	A	C	C	C	C	C
Petroleum Oils, Crude	A	A	A	A	A	A	A	A	A	B	A	B	B
Petroleum Oils, Refined	A	A	A	A	A	A	A	A	A	B	A	B	B
Phenol	A	A	A	A	A	A	A	A	C	C	C	C	C
p-Phenylenediamine	A	A	A	A	A	A	A	A	C	C	C	C	-
Phosgene	A	A	A	B	B	A	A	A	C	-	C	-	-
Phosphate Esters	A	A	A	A	A	A	A	A	C	C	C	C	C
Phosphine	A	A	A	A	A	A	A	A	-	-	-	-	-
Phosphoric Acid, Crude	C	C	A	C	B	A	A	A	C	C	C	C	C
Phosphoric Acid, Less than 45%	A	A	A	A	A	A	A	A	C	C	C	C	C
Phosphoric Acid, Above 45%, to 150°F	B	B	A	B	B	A	A	A	C	C	C	C	C
Phosphoric Acid, Above 45%, Above 150°F	C	B	A	C	B	A	A	A	C	C	C	C	-
Phosphorus, Elemental	A	A	A	A	A	A	A	A	C	C	C	C	C
Phosphorus, Pentachloride	A	A	A	B	B	A	A	A	C	C	C	C	C
Phthalic Acid	A	A	A	A	A	A	A	A	C	-	C	-	B
Phthalic Anhydride	A	A	A	A	A	A	A	A	C	-	C	-	C
Picric Acid, Molten	-	-	-	-	-	-	-	-	-	-	-	-	-
Picric Acid, Water Solution	A	A	A	A	A	A	A	A	B	B	B	B	B
Pinene	A	A	A	A	A	A	A	A	A	C	A	C	B
Piperidine	A	A	A	A	A	A	A	A	C	C	C	C	C
Polyacrylonitrile	A	A	A	A	A	A	A	A	A	A	A	A	A
Polychlorinated Biphenyls	A	A	A	A	A	A	A	A	C	C	C	C	C
Potash, Potassium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Acetate	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bichromate	A	A	A	A	A	A	C	A	A	B	A	B	B
Potassium Chromate, Red	A	A	A	A	A	A	C	A	A	B	A	B	B
Potassium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Dichromate	A	A	A	A	A	A	C	A	A	B	A	B	B

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Potassium, Elemental	C	C	C	C	C	C	C	C	C	C	C	C	C
Potassium Hydroxide	C	B	A ⁶	C	A ⁶	A ¹¹	A ⁶	C	C	C	C	C	C
Potassium Nitrate	A	A	A	A	A	A	-	B	B	B	B	B	B
Potassium Permanganate	A	A	A	A	A	A	-	B	-	B	-	B	B
Potassium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A
Producer Gas	A	A	A	A	A	A	A	A	C	A	C	B	C
Propane	A	A	A	A	A	A	A	A	C	A	C	B	C
1,3-Propane Sultone	A	A	A	-	-	A	A	-	-	-	-	-	-
Beta-Propiolactone	A	A	A	A	A	A	A	C	C	C	C	C	B
Propionaldehyde	A	A	A	A	A	A	A	C	C	C	C	-	-
Propoxur (Baygon)	A	A	A	A	A	A	A	C	C	C	C	-	-
Propyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A
Propyl Nitrate	A	A	A	A	A	A	A	C	C	C	C	C	C
Propylene	A	A	A	A	A	A	A	C	C	C	C	C	C
Propylene Dichloride	A	A	A	A	A	A	A	C	C	C	C	C	C
Propylene Glycol	A	A	A	A	A	A	A	A	A	A	A	-	A
Propylene Oxide	A	A	A	A	A	A	A	C	C	C	C	C	B
1,2-Propylenimine	-	-	A	-	-	A	A	C	C	C	C	C	C
Prussic Acid, Hydrocyanic Acid	A	A	A	A	A	A	A	A	B	A	B	B	A
Pyridine	A	A	A	B	B	A	A	C	C	C	C	C	B
Quinoline	A	A	A	B	B	A	A	C	C	C	C	C	C
Quinone	A	A	A	A	A	A	-	-	-	-	-	-	-
Refrigerants	SEE SPECIFIC RATINGS BELOW												
R 10	A	A	A	B	B	A	A	C	C	C	C	C	C
R 11	A	A	A	A	A	A	A	A	C	A	C	C	C
R 12	A	A	A	A	A	A	A	A	A	A	A	A	A
R 13	A	A	A	A	A	A	A	A	A	A	A	A	A
R 13B1	A	A	A	A	A	A	A	A	A	A	A	A	A
R 21	A	A	A	A	A	A	A	C	C	C	C	A	C
R 22	A	A	A	A	A	A	A	B	B	B	B	A	A
R 23	A	A	A	A	A	A	A	C	A	C	A	A	A
R 31	A	A	A	A	A	A	A	C	A	C	A	A	A
R 32	A	A	A	A	A	A	A	A	A	A	A	A	A
R 112	A	A	A	A	A	A	A	A	C	A	C	A	C
R 113	A	A	A	A	A	A	A	A	A	A	A	A	C

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number													
	GYLON®													
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700	
R 114	A	A	A	A	A	A	A	A	A	A	A	A	A	
R 114B2	A	A	A	A	A	A	A	A	A	C	A	C	A	C
R 115	A	A	A	A	A	A	A	A	A	A	A	A	A	A
R 123	A	A	A	A	A	A	A	A	C ³	C	C ³	C	A ³	C
R 124	A	A	A	A	A	A	A	A	C	A	C	A	A	A
R 125	A	A	A	A	A	A	A	A	-	A	-	A	A	A
R 134a	A	A	A	A	A	A	A	A	B	A	B	A	A	A
R 141b	A	A	A	A	A	A	A	A	A	-	A	-	A	-
R 142b	A	A	A	A	A	A	A	A	A	A	A	A	A	A
R 143a	A	A	A	A	A	A	A	A	-	A	-	A	A	A
R 152a	A	A	A	A	A	A	A	A	A	A	A	A	A	A
R 218	A	A	A	A	A	A	A	A	A	A	A	A	A	A
R 290 (Propane)	A	A	A	A	A	A	A	A	A	C	A	C	B	C
R 500	A	A	A	A	A	A	A	A	A	-	A	-	A	-
R 502	A	A	A	A	A	A	A	A	A	A	A	A	A	-
R 503	A	A	A	A	A	A	A	A	C	A	C	A	A	A
R 507	A	A	A	A	A	A	A	A	B	-	B	-	A	A
R 717 (Ammonia)	A	A	A	A	A	A	A	A	B	-	B	-	A	A
R 744 (Carbon Dioxide)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
R1234 yf	A	A	A	A	A	A	A	A	B	-	B	-	A	B
C316	A	A	A	A	A	A	A	A	A	A	A	A	A	A
C318	A	A	A	A	A	A	A	A	A	A	A	A	A	A
HP62	A	A	A	A	A	A	A	A	A	-	A	-	A	-
HP80	A	A	A	A	A	A	A	A	-	-	-	-	A	-
HP81	A	A	A	A	A	A	A	A	-	-	-	-	A	-
Salt Water	A	A	A	B	B	A	A	A	A	A	A	A	A	A
Saltpeter, Potassium Nitrate	A	A	A	A	A	A	-	-	B	B	B	B	B	B
2,4-D Salts and Esters	A	A	A	-	-	A	A	A	C	C	C	C	C	C
Sewage	A	A	A	A	A	A	A	A	A	B	A	B	B	B
Silver Nitrate	A	A	A	A	A	A	-	-	B	A	B	A	A	A
Skydrols	A	A	A	A	A	A	A	A	C	C	C	C	C	B
Soap Solutions	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Soda Ash, Sodium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bicarbonate, Baking Soda	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulfate (Dry)	A	A	A	A	A	A	A	A	A	A	A	A	A	A

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Sodium Bisulfite	A	A	A	B	B	A	A	A	A	A	A	A	A
Sodium Chlorate	A	A	A	A	A	A	A	C	-	C	-	C	C
Sodium Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A
Sodium Cyanide	C	C	A	C	C	A	A	C	C	C	C	C	C
Sodium, Elemental	C	C	C	C	C	C	C	C	C	C	C	C	C
Sodium Hydroxide	C	B	A ⁶	C	A ⁶	A ¹¹	A ⁶	C	C	C	C	C	C
Sodium Hypochlorite	A	A	A	B	B	A	-	C	-	C	-	C	C
Sodium Metaborate Peroxyhydrate	A	A	A	B	B	A	C	B	B	B	B	B	B
Sodium Metaphosphate	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Nitrate	A	A	A	A	A	A	-	B	B	B	B	B	B
Sodium Perborate	A	A	A	B	B	A	C	B	B	B	B	B	B
Sodium Peroxide	A	A	A	A	A	A	C	C	C	C	C	C	C
Sodium Phosphate, Monobasic	A	A	A	A	A	A	A	B	B	B	B	B	B
Sodium Phosphate, Dibasic	B	B	A	B	A	A	A	B	B	B	B	B	B
Sodium Phosphate, Tribasic	C	B	A	C	A	A	A	C	C	C	C	C	C
Sodium Silicate	B	B	A	B	A	A	A	B	B	B	B	B	B ⁴
Sodium Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulfide	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Superoxide	A	A	A	A	A	A	C	C	C	C	C	C	C
Sodium Thiosulfate, "Hypo"	A	A	A	A	A	A	A	A	A	A	A	A	A
Soybean Oil 10	A	A	A	A	A	A	A	A	C	A	C	B	B
Stannic Chloride	A	A	A	C	C	A	A	B	B	B	B	-	B
Steam, Saturated, to 150 psig ¹²	A	A	A	A	A	A	A	A ¹²	A ¹²	B ⁹	B ⁹	B ⁹	B ⁹
Steam, Superheated	-	-	-	-	-	-	-	C	C	C	C	C	C
Stearic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A
Stoddard Solvent	A	A	A	A	A	A	A	A	C	A	C	B	C
Styrene	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Styrene Oxide	A	A	A	A	A	A	A	C	C	C	C	C	C
Sulfur Chloride	A	A	A	C	C	A	A	C	C	C	C	C	C
Sulfur Dioxide	A	A	A	A	A	A	A	C	C	C	C	C	B
Sulfur, Molten	A	A	A	A	A	A	A	C	C	C	C	B	C
Sulfur Trioxide, Dry	A	A	A	A	A	A	-	C	C	C	C	C	C
Sulfur Trioxide, Wet	A	A	A	B	B	A	B	C	C	C	C	C	C
Sulfuric Acid, 10%, 150°F and below	A	A	A	B	B	A	-	C	C	C	C	C	C
Sulfuric Acid, 10%, Above 150°F	A	A	A	C	C	A	-	-	C	-	C	C	C

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number													
	GYLON®													
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700	
Sulfuric Acid, 10-75%, 500°F and below	A	A	A	C	C	A	-	-	C	-	C	C	C	
Sulfuric Acid, 75-98%, 150°F and below	A	A	B	C	C	A	C	C	C	C	C	C	C	
Sulfuric Acid, 75-98%, 150°F to 500°F	A	B ¹⁷	B	C	C	A	C	C	C	C	C	C	C	
Sulfuric Acid, Fuming	A	-	C	C	C	A	C	C	C	C	C	C	C	
Sulfurous Acid	A	A	A	B	B	A	-	B	B	B	B	-	-	
Syltherm 800	A	A	A	A	A	A	A	B	B	B	B	B	B	
Syltherm XLT	A	A	A	A	A	A	A	B	B	B	B	B	B	
Tannic Acid	A	A	A	- ⁸	- ⁸	A	A	A	A	A	A	A	A	
Tar	A	A	A	A	A	A	A	C	A	A	C	B	C	
Tartaric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	
2,3,7,8-TCDB-p-Dioxin	A	A	A	-	-	A	A	C	C	C	C	C	C	
Tertiary Butyl Amine	A	A	A	A	A	A	A	B	-	B	-	C	B	
Tetrabromoethane	A	A	A	A	A	A	A	C	C	C	C	C	C	
Tetrachlorethane	A	A	A	A	A	A	A	C	C	C	C	C	C	
Tetrachloroethylene	A	A	A	A	A	A	A	C	C	C	C	C	C	
Tetrahydrofuran, THF	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol 44	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol 55	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol 59	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol 60	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol 66	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol 75	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol D12	A	A	A	A	A	A	A	B	C	B	C	B	C	
Therminol LT	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol VP-1	A	A	A	A	A	A	A	C	C	C	C	C	C	
Therminol XP	A	A	A	A	A	A	A	A	C	A	C	B	C	
Thionyl Chloride	A	A	A	C	C	A	A	C	C	C	C	C	C	
Titanium Sulfate	A	A	A	A	A	A	A	C	C	C	C	C	C	
Titanium Tetrachloride	A	A	A	C	C	A	A	B	C	C	C	C	C	
Toluene	A	A	A	A	A	A	A	C	C	C	C	C	C	
2,4-Toluenediamine	A	A	A	A	A	A	A	-	C	-	C	C	C	
2,4-Toluenediisocyanate	A	A	A	-	-	A	A	C	C	C	C	C	B	
Toluene Sulfonic Acid	A	A	A	-	-	A	A	C	C	C	C	C	C	
o-Toluidine	A	A	A	A	A	A	A	C	C	C	C	C	C	
Toxaphine	A	A	A	-	-	A	A	C	C	C	C	C	C	

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Transformer Oil (Mineral Type)	A	A	A	A	A	A	A	A	C	A	C	B	C
Transmission Fluid A	A	A	A	A	A	A	A	A	A	C	C	B	C
Trichloroacetic Acid	A	A	A	C	C	A	A	C	C	C	C	C	C
1,2,4-Trichlorobenzene	A	A	A	A	A	A	A	C	C	C	C	C	C
1,1,2-Trichloroethane	A	A	A	A	A	A	A	C	C	C	C	C	C
Trichloroethylene	A	A	A	A	A	A	A	C	C	C	C	C	C
2,4,5-Trichlorophenol	A	A	A	-	-	A	A	C	C	C	C	C	C
2,4,6-Trichlorophenol	A	A	A	-	-	A	A	C	C	C	C	C	C
Tricresylphosphate	A	A	A	A	A	A	A	C	C	C	C	C	B
Triethanolamine	A	A	A	-	-	A	A	B	B	B	B	B	B
Triethyl Aluminum	A	A	A	-	-	A	A	C	-	C	-	C	-
Triethylamine	A	A	A	A	A	A	A	B	B	B	B	B	A
Trifluralin	A	A	A	A	A	A	A	C	C	C	C	C	C
2,2,4-Trimethylpentane	A	A	A	A	A	A	A	A	C	A	C	B	C
Tricresylphosphate	A	A	A	A	A	A	A	C	C	C	C	C	B
Triethanolamine	A	A	A	-	-	A	A	B	B	B	B	B	B
Triethyl Aluminum	A	A	A	-	-	A	A	C	-	C	-	C	-
Triethylamine	A	A	A	A	A	A	A	B	B	B	B	B	A
Trifluralin	A	A	A	A	A	A	A	C	C	C	C	C	C
2,2,4-Trimethylpentane	A	A	A	A	A	A	A	A	C	A	C	B	C
Tung Oil	A	A	A	A	A	A	A	A	C	A	C	B	C
Turpentine	A	A	A	A	A	A	A	A	C	A	C	C	C
UCON Heat Transfer Fluid 500	A	A	A	A	A	A	A	A	B	A	B	B	B
UCON Process Fluid WS	A	A	A	A	A	A	A	A	B	A	B	B	B
Urea, 150°F and below	A	A	A	A	A	A	A	B	-	B	-	A	A
Urea, above 150°F	A	A	A	A	A	A	A	-	-	-	-	-	-
Varnish	A	A	A	A	A	A	A	B	C	B	C	C	C
Vegetable Oil ¹⁰	A	A	A	A	A	A	A	A	C	A	C	B	B
Vinegar ¹⁰	A	A	A	A	A	A	A	B	B	B	B	A	A
Vinyl Acetate	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	B ¹	C	B ¹	C	B ¹	B ¹
Vinyl Bromide	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Vinyl Chloride	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Vinylidene Chloride	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	A ¹	C	C	C	C	C	C
Vinyl Methacrylate	A	A	A	A	A	A	A	C	C	C	C	C	C
Water, Acid Mine w/ Oxidizing Salt	A	A	A	C	C	A	-	B	-	B	-	B	-

NOTES:

Call Gasket Applications Engineering at 1.800.448.6688 for specific recommendations.

*If fire resistant gaskets are required, please consult Fire Tests under Gasket Terms or contact Applications Engineering at the number above.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Chemical Resistance Chart

Garlock Compressed Sheet and GYLON®

Medium	Garlock Style Number												
	GYLON®												
	3500	3504 3565	3510	3560	3561	3535 3540 3545	3530	5500 9850 9900	9800	2900 2950 3000	2920 3200 3400	2930 3300	5507 3700
Water, Acid Mine, No Oxidizing Salts	A	A	A	A	A	A	A	A	-	A	-	B	A
Water, Distilled	A	A	A	A	A	A	A	A	A	A	A	A	A
Water, Return Condensate	A	A	A	A	A	A	A	A	A	A	-	-	A
Water, Seawater	A	A	A	B	B	A	A	A	A	A	A	A	A
Water, Tap	A	A	A	A	A	A	A	A	A	A	A	A	A
Whiskey and Wines ¹⁰	A	A	A	A	A	A	A	A	A	A	A	A	A
Wood Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A
Xceltherm 550	A	A	A	A	A	A	A	B	C	B	C	B	C
Xceltherm 600	A	A	A	A	A	A	A	A	C	A	C	B	C
Xceltherm MK1	A	A	A	A	A	A	A	C	C	C	C	C	C
Xceltherm XT	A	A	A	A	A	A	A	C	C	C	C	C	C
Xylene	A	A	A	A	A	A	A	C	C	C	C	C	C
Zinc Chloride	A	A	A	B	B	A	A	A	A	A	A	A	A
Zinc Sulfate	A	A	A	A	A	A	A	A	A	A	A	A	A

NOTES:

- Consult the factory regarding your specific applications. See "Monomers" in Gasketing catalog Terms section.
- Style 5507 is rated "B".
- There have been conflicting field reports concerning the suitability of NBR and neoprene bound gaskets in 123. End users should take note.
- Style 5507 is rated "A".
- Some chromium plating baths contain fluorides that can attack silica and silicate type fillers in some GYLON® styles. If the bath is known to contain little or no fluoride, all GYLON® styles should be suitable for use.
- These GYLON® styles can be expected to be suitable to 60% concentration at temperatures up to 250°F (121°C).
- Use GYLON® styles 3502, 3503, 3505, 3562, 3563. These styles are specially processed, cleaned and packaged for oxygen service.
- This GYLON® contains a stainless steel insert. There is a possibility that this might contribute traces of iron to form iron tannates, resulting in undesirable color in the tannic acid.
- These styles are not preferred choices for steam service, but are successful when adequately compressed.
- If a gasketing material that conforms to FDA requirements is desired, contact factory for specific recommendations.
- These GYLON® gasket styles can be expected to be suitable to 75% concentration at temperatures up to 400°F (204°C).
- Minimum recommended assembly stress = 4,800psi. Preferred assembly stress = 6,000-10,000psi. Gasket thickness of 1/16" strongly preferred. For saturated steam above 150psig, consult Garlock Engineering.
- Some detergent solutions are strongly alkaline and/or may contain bleach. Please contact Applications Engineering.
- Gylon 3545 is suitable for up to 200°F wet or dry fluorine gas. Above this, please consult Applications Engineering.
- If lead chromate is also present please consult Applications Engineering.
- If NSF 61 Approved gaskets are required, contact Applications Engineering.
- GYLON® 3504 is acceptable for use in sulfuric acid (up to 99%) up to 250°F. To optimize the performance of the assembly and minimize media permeation we highly recommend using the recommended installation instructions on page C-40 (with emphasis on the re-torque) and a minimum gasket stress of 4,800 psi.

KEY

- A** Suitable
- B** Depends on operating conditions
- C** Unsuitable
- No data or insufficient evidence

Sheet Sizes and Tolerances

Garlock Compressed Sheet and GYLON®

COMPRESSED GASKETING

	60" x 60"						60" x 120"						60" x 180"						150" x 150"		
	1/64"	1/32"	3/64"	1/16"	3/32"	1/8"	1/64"	1/32"	3/64"	1/16"	3/32"	1/8"	1/64"	1/32"	3/64"	1/16"	3/32"	1/8"	1/32"	1/16"	1/8"
5500/9900	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
3700/5507	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
9800/9850	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
BLUE-GARD®	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
MULTI-SWELL™	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

NOTE:

3700 and 5507 are also available in 120" x 120"

GYLON® GASKETING

	30" x 30"	60" x 60"					70" x 70"		60" x 90"		40" x 40"	
	1/32"	1/16"	1/8"	3/16"	1/4"	1/16"	1/8"	1/16"	1/8"	1/16"	1/8"	
Style 3500	•	•	•	•	•	•	•	•	•			
Style 3504	•	•	•	•	•	•	•	•	•			
Style 3510	•	•	•	•	•	•	•	•	•			
Style 3530		•	•							•	•	
Style 3540		•	•	•	•	•	•					
Style 3545		•	•	•	•	•	•					
Style 3565		•	•	•	•	•	•					

FLEXIBLE GRAPHITE GASKETING

	40" x 40"			59.4" x 60"		
	1/32"	1/16"	1/8"	1/32"	1/16"	1/8"
Style 3123/3125	•	•	•	•	•	•
Style 3124/3126	•	•	•	•	•	•
Style 3125SS	•	•	•	•	•	•
Style 3125TC	•	•	•	•	•	
Style 3128		•	•	•	•	

NOTE:

Tolerance is ±10% of thickness. This supercedes the limits in ASTM F104.

STANDARD COMMERCIAL TOLERANCES OF COMPRESSED FIBER & GYLON® GASKETING

Nominal Thickness	Variation	Tolerance
1/64" (0.016")*	0.014" - 0.021"	+0.005"/-0.002"
0.020"	0.018" - 0.025"	+0.005"/-0.002"
1/32" (0.031")	0.026" - 0.036"	±0.005"
3/64" (0.047")	0.042" - 0.052"	±0.005"
1/16" (0.062")	0.056" - 0.068"	±0.006"
5/64" (0.078")	0.071" - 0.085"	±0.007"
3/32" (0.094")	0.086" - 0.102"	±0.008"

See page 15 for vegetable fiber tolerances.

Nominal Thickness	Variation	Tolerance
7/64" (0.109")	0.100" - 0.118"	±0.009"
1/8" (0.125")	0.115" - 0.135"	±0.010"
9/64" (0.141")	0.126" - 0.156"	±0.015"
5/32" (0.156")	0.141" - 0.171"	±0.015"
3/16" (0.188")	0.173" - 0.203"	±0.015"
7/32" (0.219")	0.204" - 0.234"	±0.015"
1/4" (0.25")	0.230" - 0.270"	±0.020"

Close tolerance sheet available upon request. Tolerance supercede the limits in ASTM F104.

WARNING:

The failure to select the proper sealing product for your application can result in property damage and/or serious personal injury. You should not purchase or use any of the products identified in this brochure without undertaking a thorough, independent study, and obtaining an evaluation of your particular application by qualified professionals. The descriptions of the products contained in this brochure constitute general guidelines as to product selection and installation and may not be appropriate for your particular project.

The performance data and metrics contained in this brochure are not specification min/max limits, or guarantees of performance, but instead represent typical values that have been established based upon field testing, customer field reports, and/or in-house testing. Actual performance will vary from these values and you should not rely upon these figures in determining the suitability of the use of the product for any particular application.

While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice.

GARLOCK is a registered trademark for packings, seals, gaskets, and other products of Garlock.

"M" and "Y" Data

"M" and "Y" data are to be used for flange designs only as specified in the ASME Boiler and Pressure Vessel Code Division 1, Section VIII, Appendix 2. They are not meant to be used as gasket seating stress values in actual service. Our bolt torque tables give that information and should be used as such.

"M" - Maintenance Factor

A factor that provides the additional preload needed in the flange fasteners to maintain the compressive load on a gasket after internal pressure is applied to a joint. The net operating stress on a pressurized gasket should be at least (m) x (design pressure, psi).

"Y" - Minimum Design Seating Stress

The minimum compressive stress in pounds per square inch (or bar) on the contact area of the gasket that is required to provide a seal at an internal pressure of 2 psig (0.14 bar).

Style	Thickness	M	Y (psi)
3000	1/16"	4.2	3,050
	1/8"	5.2	4,400
3123/3125	1/16"	2.0	2,500
	1/8"	2.0	2,500
3124/3126 (wire inserted)	1/16"	2.0	2,500
	1/8"	2.0	2,500
3125SS	1/16"	6.5	3,300
	1/8"	11.8*	5,900
3125TC	1/16"	2.6	2,500
	1/8"	6.0	3,000
3128	1/16"	3.0	2,000
	1/8"	3.6	3,000
3200/3400	1/16"	3.5	2,100
	1/8"	6.6	3,000
3300	1/16"	2.1	3,050
	1/8"	4.0	3,500
3500	1/16"	5.0	2,750
	1/8"	5.0	3,500
3504	1/16"	3.0	1,650
	1/8"	2.5	3,000
	3/16"	2.5	3,000
	1/4"	2.5	3,000
3510	1/16"	2.0	2,350
	1/8"	2.0	2,500
3530	1/16"	2.8	1,650
	1/8"	2.0	1,650
3535	1/4"	2.0	3,000
3540	1/16"	3.0	1,700
	1/8"	3.0	2,200
	3/16"	2.0	2,200
	1/4"	2.0	2,500

Style	Thickness	M	Y (psi)
3545 (in envelope)	1/16"	2.6	1,500
	1/8"	2.0	2,200
	3/16"	2.0	2,200
	1/4"	7.0	3,700
	1/8"	2.0	800
HP 3560	1/16"	5.0	3,500
	1/8"	5.0	4,000
HP 3561	1/16"	5.0	3,500
	1/8"	5.0	4,000
3565	1/16"	2.8	1,400
	1/8"	3.7	2,300
	3/16"	5.5	2,800
	1/4"	6.0	2,800
3700	1/16"	3.5	2,800
	1/8"	6.7	4,200
5500	1/16"	6.6	2,600
	1/8"	6.6	3,300
5507	1/16"	3.5	2,400
	1/8"	5.5	3,900
9800	1/16"	3.5	2,350
	1/8"	8.0	3,200
9850	1/16"	6.5	2,550
	1/8"	8.0	2,800
9900	1/16"	4.5	4,100
	1/8"	6.0	4,100
STRESS SAVER® 370	1/8"	2.0	400
STRESS SAVER® XP	1/8"	0.5	100
STRESS SAVER® 3504	1/8"	2.0	400

NOTE:

* These M values, based on ambient temperature leakage with nitrogen, are high. Field experience has shown that lower values would be workable in elevated temperatures. Consult applications engineering.

Gasket Constants

Style	Thickness	Gb (psi)	a	Gs (psi)	S100 (psi)	S1000 (psi)	S3000 (psi)	S5000 (psi)	S10000 (psi)	Tpmin	Tpmax
3123/3125	1/16"	970	0.384	0.05	5,686	13,765	20,989	25,537	33,325	-	-
3125SS	1/16"	816	0.377	0.066	4,631	11,033	16,694	20,240	26,284	-	-
3125TC	1/16"	1400	0.324	0.01	6,225	13,126	18,738	22,110	27,678	-	-
3500	1/16"	949	0.253	2.60E+00	3,043	5,448	7,194	8,187	9,756	373	16,890
	1/8"	1980	0.169	3.93E-01	4,313	6,365	7,663	8,354	9,393	223	25,375
3504	1/16"	183	0.375	4.01E-03	947	2,155	3,190	3,828	4,903	3,097	14,817
	1/8"	1008	0.221	2.23E+00	2,793	4,649	5,928	6,638	7,739	141	72,992
3510	1/16"	289	0.274	6.61E-11	1,021	1,918	2,592	2,981	3,605	11,881	25,501
	1/8"	444	0.332	1.29E-02	2,048	4,399	6,336	7,507	9,449	1,770	17,550
3535	3/8"	430	0.286	1.69E-09	1,605	3,101	4,245	4,913	5,991	373	-
3540	1/16"	550	0.304	7.64E-01	2,230	4,491	6,272	7,326	9,044	973	23,670
3545	1/16"	162.1	0.379	1.35E-09	927	2,217	3,361	4,079	5,303	18,209	61,985
	1/8"	92.48	0.468	2.50E-03	799	2,349	3,930	4,992	6,907	4,460	53,307
	3/16"	628	0.249	7.93E-05	1,977	3,507	4,611	5,236	6,222	373	-
3561	1/16"	72.3	0.466	2.16E-01	618	1,808	3,016	3,827	5,286	1,688	21,755
3700	1/8"	1,318	0.258	6.00E-01	4,324	7,833	10,400	11,865	14,188	373	-
5500	1/16"	1,247	0.249	1.10E+01	3,925	6,964	9,155	10,397	12,356	373	-
9850	1/16"	1,591	0.239	9.39E+00	4,783	8,292	10,782	12,182	14,377	141	110,005
9900	1/16"	2,322	0.133	1.80E+01	4,284	5,819	6,735	7,208	7,904	199	128,434

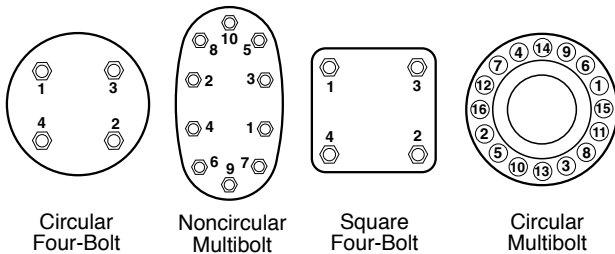
Gb = stress at which seal is initiated; "a" = the slope of the log/log tightness curve; Gs = intersection of the unload curve with the vertical axis (Tp1).

NOTE:

For a 5" OD gasket at 800 psig, Tp100 = 102ml/min. leakage, Tp1,000 = 1.02ml/min. leakage, Tp10,000 = 0.01ml/min. leakage.

Before Installation

- » Remove old gasket, and clean flange surface of all debris. For best results, use a soft metal flange scraper, an aerosol gasket remover and a soft wire brush, then inspect the flange for damage. Be sure surface finish and flatness are satisfactory.
- » Use the thinnest possible gasket. However, flanges that are warped, bowed or severely pitted require thicker gaskets.
- » It is best to install gaskets as received. On compressed fiber gaskets, if additional release agents are needed, dry is better than wet. Never use metal based anti-seize, since particles may accumulate in the surface imperfections, thereby creating a flange surface that is too smooth to be effective.



Installation

- » Center the gasket on the flange. This is extremely vital where raised faces are involved.
 - NOTE: Standard ANSI ring gaskets, when properly cut, should center themselves when the bolts are in place.
- » Fasteners must be new or "as new" condition
- » Use of a torque wrench and well-lubricated fasteners with hardened flat washers is essential to ensure correct initial loading.
- » Tighten bolts to compress gasket uniformly. This means going from side to side around the joint in a star-like crossing pattern. See diagrams on left.
- » Starting with all fasteners "snug", bolts should be tightened in one-third increments, according to proper bolting patterns.
- » Retorque 12 to 24 hours after start-up, whenever possible. All applicable safety standards including lockout/tagout procedure should be observed.
- » Never use liquid or metallic based anti-stick or lubricating compounds on the gaskets. Premature failure could occur as a result.

Gasket Assembly Stress Recommendations

The minimum recommended assembly stress for Garlock compressed sheet such as BLUE-GARD®, GYLON® and GRAPH-LOCK® products differs from "M" and "Y" values. "M" and "Y" do not take factors such as flange condition and blowout resistance into account. Garlock offers the following minimum assembly stresses as rules of thumb for calculating installation bolt torques.

Operating Pressure in psig (bar)	Minimum Assembly Stress Recommended psi (N/mm ²)		
	1/32" (0.8mm) Thick	1/16" (1.6mm) Thick	1/8" (3.2mm) Thick
Up to 300 (21)	2,500 (17)	3,600 (25)	4,800 (33)
Up to 800 (55)	4,800 (33)	5,400 (37)	6,400 (44)
Up to 2,000 (140)	7,400 (51)	8,400 (58)	9,400 (65)

FLAT FACE FLANGES

Minimum recommended gasket stress for GYLON® and Compressed Fiber gaskets in full face/flat faced flanges can be much lower. Stresses in the range of 1000 to 2000 psi are usually acceptable for liquid services. Please contact Applications Engineering when using these materials as full face gaskets in flat faced flanges, especially when dealing with gaseous media.

Maximum recommended compressive stress for:

- » Compressed fiber and GYLON® gaskets = 15,000 psi
- » Multi-Swell™ Style 3760 = 10,000 psi
- » GRAPH-LOCK® gaskets = 10,000 psi

Recommended compressive stress for:

- » STRESS SAVER® gaskets = 600 - 1,200 psi
- » Rubber gaskets to 60 duro = 600 - 900 psi
- » Rubber gaskets to 70 duro and higher = 600 - 1,200 psi

* Maximum stresses assume standard ASME serrated flanges at 125-250 micro-inch flange finish.

WARNING:

The failure to select the proper sealing product for your application can result in property damage and/or serious personal injury. You should not purchase or use any of the products identified in this brochure without undertaking a thorough, independent study, and obtaining an evaluation of your particular application by qualified professionals. The descriptions of the products contained in this brochure constitute general guidelines as to product selection and installation and may not be appropriate for your particular project.

The performance data and metrics contained in this brochure are not specification min/max limits, or guarantees of performance, but instead represent typical values that have been established based upon field testing, customer field reports, and/or in-house testing. Actual performance will vary from these values and you should not rely upon these figures in determining the suitability of the use of the product for any particular application.

While the utmost care has been used in compiling this brochure, we assume no responsibility for errors. Specifications subject to change without notice. This edition cancels all previous issues. Subject to change without notice.

GARLOCK is a registered trademark for packings, seals, gaskets, and other products of Garlock.

Torque and Stress Tables

Bolt Torque Tables for ASME B 16.5 Raised Face Flanges with A 193 Gr B7 Bolts

COMPRESSED SHEET* & GYLON® GASKETS 150# FLANGES

Nom. Pipe Size (inches)	No. of Bolts	Size of Bolts (inches)	Internal Pressure (psig)	Minimum Torque (ft.-lbs.)	Preferred Torque (ft.-lbs.)
0.50	4	0.50	300	9	28
0.75	4	0.50	300	13	40
1.00	4	0.50	300	17	53
1.25	4	0.50	300	26	60
1.50	4	0.50	300	35	60
2.00	4	0.63	300	69	120
2.50	4	0.63	300	81	120
3.00	4	0.63	300	119	120
3.50	8	0.63	300	66	120
4.00	8	0.63	300	84	120
5.00	8	0.75	300	117	200
6.00	8	0.75	300	148	200
8.00	8	0.75	300	200	200
10.00	12	0.88	300	188	320
12.00	12	0.88	300	250	320
14.00	12	1.00	300	317	490
16.00	16	1.00	300	301	490
18.00	16	1.13	300	448	710
20.00	20	1.13	300	395	710
24.00	20	1.25	300	563	1,000

COMPRESSED SHEET* & GYLON® GASKETS 300# FLANGES

Nom. Pipe Size (inches)	No. of Bolts	Size of Bolts (inches)	Internal Pressure (psig)	Minimum Torque (ft.-lbs.)	Preferred Torque (ft.-lbs.)
0.50	4	0.50	800	12	28
0.75	4	0.63	800	21	51
1.00	4	0.63	800	28	67
1.25	4	0.63	800	43	102
1.50	4	0.75	800	64	151
2.00	8	0.63	800	46	108
2.50	8	0.75	800	60	141
3.00	8	0.75	800	88	200
3.50	8	0.75	800	99	200
4.00	8	0.75	800	125	200
5.00	8	0.75	800	156	200
6.00	12	0.75	800	131	200
8.00	12	0.88	800	205	320
10.00	16	1.00	800	219	490
12.00	16	1.13	800	319	710
14.00	20	1.13	800	287	652
16.00	20	1.25	800	401	912
18.00	24	1.25	800	439	1,000
20.00	24	1.25	800	484	1,000
24.00	24	1.50	800	662	1,552

GRAPH-LOCK® GASKETS 150# FLANGES

Nom. Pipe Size (inches)	No. of Bolts	Size of Bolts (inches)	Internal Pressure (psig)	Minimum Torque (ft.-lbs.)	Preferred Torque (ft.-lbs.)
0.50	4	0.50	300	9	20
0.75	4	0.50	300	13	27
1.00	4	0.50	300	17	35
1.25	4	0.50	300	26	54
1.50	4	0.50	300	35	60
2.00	4	0.63	300	69	120
2.50	4	0.63	300	81	120
3.00	4	0.63	300	119	120
3.50	8	0.63	300	66	120
4.00	8	0.63	300	84	120
5.00	8	0.75	300	117	200
6.00	8	0.75	300	148	200
8.00	8	0.75	300	200	200
10.00	12	0.88	300	188	320
12.00	12	0.88	300	250	320
14.00	12	1.00	300	317	490
16.00	16	1.00	300	301	490
18.00	16	1.13	300	448	710
20.00	20	1.13	300	395	710
24.00	20	1.25	300	563	1,000

GRAPH-LOCK® GASKETS 300# FLANGES

Nom. Pipe Size (inches)	No. of Bolts	Size of Bolts (inches)	Internal Pressure (psig)	Minimum Torque (ft.-lbs.)	Preferred Torque (ft.-lbs.)
0.50	4	0.50	800	12	20
0.75	4	0.63	800	21	34
1.00	4	0.63	800	28	45
1.25	4	0.63	800	43	68
1.50	4	0.75	800	64	101
2.00	8	0.63	800	46	72
2.50	8	0.75	800	60	94
3.00	8	0.75	800	88	138
3.50	8	0.75	800	99	154
4.00	8	0.75	800	125	196
5.00	8	0.75	800	156	200
6.00	12	0.75	800	131	200
8.00	12	0.88	800	205	320
10.00	16	1.00	800	219	341
12.00	16	1.13	800	319	498
14.00	20	1.13	800	287	435
16.00	20	1.25	800	401	608
18.00	24	1.25	800	439	1,000
20.00	24	1.25	800	484	1,000
24.00	24	1.50	800	662	1,035

NOTE:

* Refers to fiber gaskets such as BLUE-GARD®, 9900, etc.

Torque and Stress Tables

Bolt Stress to Bolt Torque Conversion Tables

LOAD ON MACHINE BOLTS AND COLD ROLLED STEEL STUD BOLTS UNDER TORQUE (UNC)

Nom. Diameter of Bolts (inches)	No. of Threads per inch	Diameter of Root of Thread (inches)	Area at Root of Thread (sq. in.)	Stress					
				7,500 psi		15,000 psi		30,000 psi	
				Torque (ft. lbs.)	Clamping Force (lbs./bolt)	Torque (ft. lbs.)	Clamping Force (lbs./bolt)	Torque (ft. lbs.)	Clamping Force (lbs./bolt)
1/4	20	0.185	0.027	1	203	2	405	4	810
5/16	18	0.240	0.045	2	338	4	675	8	1,350
3/8	16	0.294	0.068	3	510	6	1,020	12	2,040
7/16	14	0.345	0.093	5	698	10	1,395	20	2,790
1/2	13	0.400	0.126	8	945	15	1,890	30	3,780
9/16	12	0.454	0.162	12	1,215	23	2,430	45	4,860
5/8	11	0.507	0.202	15	1,515	30	3,030	60	6,060
3/4	10	0.620	0.302	25	2,265	50	4,530	100	9,060
7/8	9	0.731	0.419	40	3,143	80	6,285	160	12,570
1	8	0.838	0.551	62	4,133	123	8,265	245	16,530
1-1/8	7	0.939	0.693	98	5,190	195	10,380	390	20,760
1-1/4	7	1.064	0.890	137	6,675	273	13,350	545	26,700
1-3/8	6	1.158	1.054	183	7,905	365	15,810	730	31,620
1-1/2	6	1.283	1.294	219	9,705	437	19,410	875	38,820
1-5/8	5.5	1.389	1.515	300	11,363	600	22,725	1,200	45,450
1-3/4	5	1.490	1.744	390	13,080	775	26,160	1,550	52,320
1-7/8	5	1.615	2.049	525	15,368	1,050	30,735	2,100	61,470
2	4.5	1.711	2.300	563	17,250	1,125	34,500	2,250	69,000

LOAD ON ALLOY STEEL STUD BOLTS UNDER TORQUE (8UN)*

Nom. Diameter of Bolts (inches)	No. of Threads per inch	Diameter of Root of Thread (inches)	Area at Root of Thread (sq. in.)	Stress					
				30,000 psi		45,000 psi		60,000 psi	
				Torque (ft. lbs.)	Clamping Force (lbs./bolt)	Torque (ft. lbs.)	Clamping Force (lbs./bolt)	Torque (ft. lbs.)	Clamping Force (lbs./bolt)
1/4	20	0.185	0.027	4	810	6	1,215	8	1,620
5/16	18	0.240	0.045	8	1,350	12	2,025	16	2,700
3/8	16	0.294	0.068	12	2,040	18	3,060	24	4,080
7/16	14	0.345	0.093	20	2,790	30	4,185	40	5,580
1/2	13	0.400	0.126	30	3,780	45	5,670	60	7,560
9/16	12	0.454	0.162	45	4,860	68	7,290	90	9,720
5/8	11	0.507	0.202	60	6,060	90	9,090	120	12,120
3/4	10	0.620	0.302	100	9,060	150	13,590	200	18,120
7/8	9	0.731	0.419	160	12,570	240	18,855	320	25,140
1	8	0.838	0.551	245	16,530	368	24,795	490	33,060
1-1/8	8	0.963	0.728	355	21,840	533	32,760	710	43,680
1-1/4	8	1.088	0.929	500	27,870	750	41,805	1,000	55,740
1-3/8	8	1.213	1.155	680	34,650	1,020	51,975	1,360	69,300
1-1/2	8	1.338	1.405	800	42,150	1,200	63,225	1,600	84,300
1-5/8	8	1.463	1.680	1,100	50,400	1,650	75,600	2,200	100,800
1-3/4	8	1.588	1.980	1,500	59,400	2,250	89,100	3,000	118,800
1-7/8	8	1.713	2.304	2,000	69,120	3,000	103,680	4,000	138,240
2	8	1.838	2.652	2,200	79,560	3,300	119,340	4,400	159,120
2-1/4	8	2.088	3.423	3,180	102,690	4,770	154,035	6,360	205,380
2-1/2	8	2.338	4.292	4,400	128,760	6,600	193,140	8,800	257,520
2-3/4	8	2.588	5.259	5,920	157,770	8,800	236,655	11,840	315,540
3	8	2.838	6.324	7,720	189,720	11,580	284,580	15,440	379,440

These tables are for reference only. See torque tables for recommended installation torques. Values shown in these tables are based on steel bolting that has been well-lubricated with heavy graphite and oil mixture. Research has shown that a non-lubricated bolt has about 50% of the efficiency of a well-lubricated bolt. It has been further found that different lubricants produce results varying between the limit of 50% and 100% of the tabulated stress figures.

* 8UN (8 thread series) is the standard for ASTM A193 B7, A193 B8, B8M and A320 bolts and studs

Torque and Stress Tables

Available Gasket Stress vs. Bolt Stress

150# FLAT FACE FLANGES

Nom. Pipe Size (inches)	Number of Bolts	Size of Bolts (inches)	Bolt Stress						Minimum Recommended Assembly Stress Compressed Fiber & GYLON®		
			30,000 psi		60,000 psi		75,000 psi		1/32" Thick (psi)	1/16" Thick (psi)	1/8" Thick (psi)
			Bolt Torque (ft. lbs.)	Gasket Stress (psi)	Bolt Torque (ft. lbs.)	Gasket Stress (psi)	Bolt Torque (ft. lbs.)	Gasket Stress (psi)			
0.5	4	0.50	30	1,929	60	3,857	75	4,821	2,500	3,600	4,800
0.75	4	0.50	30	1,557	60	3,114	75	3,893	2,500	3,600	4,800
1	4	0.50	30	1,302	60	2,605	75	3,256	2,500	3,600	4,800
1.25	4	0.50	30	1,125	60	2,250	75	2,813	2,500	3,600	4,800
1.5	4	0.50	30	973	60	1,946	75	2,432	2,500	3,600	4,800
2	4	0.63	60	1,100	120	2,201	150	2,751	2,500	3,600	4,800
2.5	4	0.63	60	803	120	1,606	150	2,008	2,500	3,600	4,800
3	4	0.63	60	740	120	1,479	150	1,849	2,500	3,600	4,800
3.5	8	0.63	60	1,194	120	2,388	150	2,985	2,500	3,600	4,800
4	8	0.63	60	1,099	120	2,197	150	2,746	2,500	3,600	4,800
5	8	0.75	100	1,466	200	2,931	250	3,664	2,500	3,600	4,800
6	8	0.75	100	1,299	200	2,598	250	3,247	2,500	3,600	4,800
8	8	0.75	100	906	200	1,813	250	2,266	2,500	3,600	4,800
10	12	0.88	160	1,497	320	2,993	400	3,742	2,500	3,600	4,800
12	12	0.88	160	1,031	320	2,062	400	2,577	2,500	3,600	4,800
14	12	1.00	245	1,099	490	2,198	613	2,748	2,500	3,600	4,800
16	16	1.00	245	1,220	490	2,440	613	3,050	2,500	3,600	4,800
18	16	1.13	355	1,613	710	3,226	888	4,033	2,500	3,600	4,800
20	20	1.13	355	1,713	710	3,425	888	4,282	2,500	3,600	4,800
24	20	1.25	500	1,730	1,000	3,460	1,250	4,326	2,500	3,600	4,800
26	24	1.25	500	1,886	1,000	3,771	1,250	4,714	-	4,049	5,249
28	28	1.25	500	2,006	1,000	4,012	1,250	5,015	-	4,075	5,275
30	28	1.25	500	1,811	1,000	3,622	1,250	4,528	-	4,092	5,292
32	28	1.50	800	2,329	1,600	4,659	2,000	5,823	-	4,076	5,276
34	32	1.50	800	2,550	1,600	5,099	2,000	6,374	-	4,115	5,315
36	32	1.50	800	2,335	1,600	4,670	2,000	5,838	-	4,129	5,329
38	32	1.50	800	2,025	1,600	4,050	2,000	5,063	-	4,111	5,311
40	36	1.50	800	2,194	1,600	4,389	2,000	5,486	-	4,145	5,345
42	36	1.50	800	2,034	1,600	4,068	2,000	5,085	-	4,157	5,357
44	40	1.50	800	2,124	1,600	4,247	2,000	5,309	-	4,175	5,375
46	40	1.50	800	2,033	1,600	4,066	2,000	5,083	-	4,201	5,401
48	44	1.50	800	2,108	1,600	4,217	2,000	5,271	-	4,217	5,417
50	44	1.75	1,500	2,873	3,000	5,746	3,750	7,182	-	4,247	5,447
52	44	1.75	1,500	2,690	3,000	5,379	3,750	6,724	-	4,256	5,456
54	44	1.75	1,500	2,525	3,000	5,050	3,750	6,313	-	4,264	5,464
56	48	1.75	1,500	2,553	3,000	5,105	3,750	6,381	-	4,262	5,462
58	48	1.75	1,500	2,406	3,000	4,812	3,750	6,015	-	4,269	5,469
60	52	1.75	1,500	2,544	3,000	5,089	3,750	6,361	-	4,299	5,499

NOTES:

- ¹ The values shown are not recommended values. The intent of this table is to illustrate the relationship between bolt torque, bolt stress, gasket stress, and how these three factors relate to the contact area of ASME B16.5 & B16.47 Series A flat face flanges.
- ² Full face gaskets will typically seal at stresses well below the minimum recommended values shown. See also "Flanges" on page 56.
- ³ Contact Garlock Applications Engineering at 1.800.448.6688 for further discussions regarding the use of compressed, GYLON® or GRAPH-LOCK® products in flat face flanges.
- ⁴ For full face GYLON®, compressed sheet and GRAPH-LOCK® gasketing, 1,000 to 2,000 psi is normally acceptable for installation for liquid service.

Torque and Stress Tables

Available Gasket Stress vs. Bolt Stress

300# FLAT FACE FLANGES

Nom. Pipe Size (inches)	Number of Bolts	Size of Bolts (inches)	Bolt Stress						Minimum Recommended Assembly Stress Compressed Fiber, GRAPH-LOCK® & GYLON®		
			30,000 psi		60,000 psi		75,000 psi		1/32" Thick (psi)	1/16" Thick (psi)	1/8" Thick (psi)
			Bolt Torque (ft. lbs.)	Gasket Stress (psi)	Bolt Torque (ft. lbs.)	Gasket Stress (psi)	Bolt Torque (ft. lbs.)	Gasket Stress (psi)			
0.5	4	0.50	30	1,632	60	3,264	75	4,081	4,800	5,400	6,400
0.75	4	0.63	60	1,650	120	3,300	150	4,125	4,800	5,400	6,400
1	4	0.63	60	1,506	120	3,013	150	3,766	4,800	5,400	6,400
1.25	4	0.63	60	1,328	120	2,656	150	3,319	4,800	5,400	6,400
1.5	4	0.75	100	1,428	200	2,857	250	3,571	4,800	5,400	6,400
2	8	0.63	60	1,924	120	3,848	150	4,810	4,800	5,400	6,400
2.5	8	0.75	100	2,124	200	4,247	250	5,309	4,800	5,400	6,400
3	8	0.75	100	1,798	200	3,597	250	4,496	4,800	5,400	6,400
3.5	8	0.75	100	1,525	200	3,051	250	3,813	4,800	5,400	6,400
4	8	0.75	100	1,226	200	2,453	250	3,066	4,800	5,400	6,400
5	8	0.75	100	1,099	200	2,198	250	2,748	4,800	5,400	6,400
6	12	0.75	100	1,341	200	2,682	250	3,352	4,800	5,400	6,400
8	12	0.88	160	1,357	320	2,714	400	3,393	4,800	5,400	6,400
10	16	1.00	245	1,928	490	3,855	613	4,819	4,800	5,400	6,400
12	16	1.13	355	1,841	710	3,682	888	4,602	4,800	5,400	6,400
14	20	1.13	355	1,808	710	3,615	888	4,519	4,800	5,400	6,400
16	20	1.25	500	1,924	1,000	3,847	1,250	4,809	4,800	5,400	6,400
18	24	1.25	500	2,016	1,000	4,031	1,250	5,039	4,800	5,400	6,400
20	24	1.25	500	1,728	1,000	3,457	1,250	4,321	4,800	5,400	6,400
24	24	1.50	800	1,909	1,600	3,818	2,000	4,773	5,000	5,600	6,400
26	28	1.63	1,100	2,562	2,200	5,124	2,750	6,405	-	6,171	7,171
28	28	1.63	1,100	2,272	2,200	4,544	2,750	5,680	-	6,193	7,193
30	28	1.75	1,500	2,491	3,000	4,982	3,750	6,228	-	6,247	7,247
32	28	1.88	2,000	2,703	4,000	5,406	5,000	6,758	-	6,299	7,299
34	28	1.88	2,000	2,493	4,000	4,987	5,000	6,234	-	6,336	7,336
36	32	2.00	2,200	3,058	4,400	6,115	5,500	7,644	-	6,378	7,378
38	32	1.50	800	2,921	1,600	5,841	2,000	7,301	-	7,365	8,365
40	32	1.62	1,100	3,026	2,200	6,052	2,750	7,566	-	7,286	8,286
42	32	1.62	1,100	2,878	2,200	5,756	2,750	7,194	-	7,378	8,378
44	32	1.75	1,500	3,077	3,000	6,155	3,750	7,693	-	7,369	8,369
46	28	1.88	2,000	2,800	4,000	5,600	5,000	7,000	-	7,323	8,323
48	32	1.88	2,000	3,119	4,000	6,237	5,000	7,796	-	7,441	8,441
50	32	2.00	2,200	3,287	4,400	6,574	5,500	8,217	-	7,428	8,428
52	32	2.00	2,200	3,156	4,400	6,311	5,500	7,889	-	7,506	8,506
54	28	2.25	3,180	3,095	6,360	6,190	7,950	7,737	-	7,372	8,372
56	28	2.25	3,180	2,981	6,360	5,963	7,950	7,453	-	7,443	8,443
58	32	2.25	3,180	3,346	6,360	6,693	7,950	8,366	-	7,552	8,552
60	32	2.25	3,180	3,230	6,360	6,460	7,950	8,075	-	7,623	8,623

NOTES:

¹ The values shown are not recommended values. The intent of this table is to illustrate the relationship between bolt torque, bolt stress, gasket stress, and how these three factors relate to the contact area of ASME B16.5 & B16.47 Series A flat face flanges.

² Full face gaskets will typically seal at stresses well below the minimum recommended values shown. See also "Flanges" on page 56.

³ Contact Garlock Applications Engineering at 1.800.448.6688 for further discussions regarding the use of compressed, GYLON® or GRAPH-LOCK® products in flat face flanges.

⁴ For full face GYLON®, compressed sheet and GRAPH-LOCK® gasketing, 1,000 to 2,000 psi is normally acceptable for installation.

Torque and Stress Tables

Rubber (Elastomeric) Full Face Gaskets

ASME B16.5 CLASS 150# FLAT FLANGES WITH A193 GRADE B7 BOLTS

Nom. Pipe Size (inches)	Number of Bolts	Size of Bolts (inches)	Minimum Torque (ft. lbs.)	<70 Durometer Shore A	>70 Durometer Shore A
				Preferred Torque (ft. lbs.)	Bolt Torque (ft. lbs.)
0.5	4	0.50	9	14	19
0.75	4	0.50	12	17	23
1	4	0.50	14	21	28
1.25	4	0.50	16	24	32
1.5	4	0.50	19	28	37
2	4	0.63	33	49	66
2.5	4	0.63	45	67	90
3	4	0.63	49	73	97
3.5	8	0.63	30	45	60
4	8	0.63	33	49	66
5	8	0.75	41	61	82
6	8	0.75	46	69	92
8	8	0.75	66	99	132
10	12	0.88	64	96	128
12	12	0.88	93	140	186
14	12	1.00	134	201	268
16	16	1.00	120	181	241
18	16	1.13	132	198	264
20	20	1.13	124	187	249
24	20	1.25	173	260	347

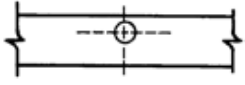
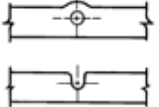
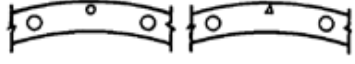

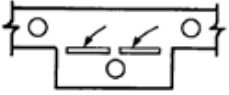
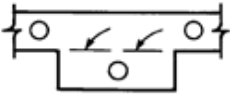
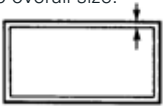
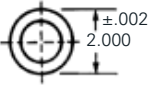
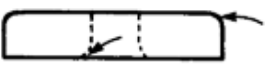
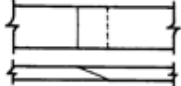
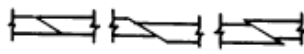
ASME B16.47 SERIES A CLASS 150# FLAT FLANGES WITH A193 GRADE B7 BOLTS

Nom. Pipe Size (inches)	Number of Bolts	Size of Bolts (inches)	Minimum Torque (ft. lbs.)	<70 Durometer Shore A	>70 Durometer Shore A
				Preferred Torque (ft. lbs.)	Bolt Torque (ft. lbs.)
26	24	1.25	238	238	318
28	28	1.25	224	224	299
30	28	1.25	248	248	331
32	28	1.50	309	309	412
34	32	1.50	283	283	377
36	32	1.50	309	309	411
38	32	1.50	356	356	474
40	36	1.50	328	328	438
42	36	1.50	354	354	472
44	40	1.50	339	339	452
46	40	1.50	354	354	473
48	44	1.50	342	342	456
50	44	1.75	470	470	626
52	44	1.75	502	502	669
54	44	1.75	535	535	713
56	48	1.75	528	528	705
58	48	1.75	561	561	747
60	52	1.75	530	530	707

NOTES:

- » This torque table applies for 1/16" and 1/8" thick homogeneous elastomeric gaskets. The pressure rating of the material may vary depending on the grade
- » The above mentioned torque values are based on a maximum bolt stress of 60,000 psi. Bolt yield should be at least 80,000 psi
- » This table does not take flange strength into consideration. We recommend consulting the flange manufacturer to confirm the suitability of the above-mentioned values
- » Apply torque in increments. When the gasket extends past the OD of the flange by 1/4" to 3/8", stop tightening

Gasket Design Tips

PROBLEM	RESULT	SUGGESTED SOLUTIONS
<p>Bolt holes close to the edge.</p> 	<p>Causes breakage in stripping and assembling.</p>	<p>Projection or "ear".</p> 
<p>Very small bolt holes or non-circular openings.</p> 	<p>Require handpicking.... easy to miss.</p>	<p>Avoid hole sizes under 3/32" diameter. If small hole is for locating or indexing, change to notch.</p> 
<p>Tear-away parts with open slots at attached edges.</p> 	<p>Slots require handpicking, costly dies and die maintenance.</p>	<p>Simple perforation.</p> 
<p>Thin walls, delicate cross-section in relation to overall size.</p> 	<p>High scrap loss; stretching or distortion in shipment or use. Restricts choice to high tensile strength materials.</p>	<p>Have the gasket in mind during early design stages.</p>
<p>Metalworking tolerances applied to gasket thickness, diameters, length, width, etc.</p> 	<p>Results in perfectly usable parts being rejected at incoming inspection. Requires time & correspondence to reach agreement on practical limits. Increases cost of parts and tooling. Delays delivery.</p>	<p>Most gasket materials are compressible. Many are affected by humidity changes. Try standard or commercial tolerances before concluding that special accuracy is required.</p>
<p>Transference of fillets, radii, etc. from mating metal parts to gasket.</p> 	<p>Unless part is molded, such features mean extra operations and higher cost.</p>	<p>Most gasket stocks will conform to mating parts without pre-shaping. Be sure radii, chamfers, etc., are functional, not merely copied from metal members.</p>
<p>Large gaskets made in sections with beveled joints.</p> 	<p>Extra operations to skive or glue. Difficult to obtain smooth, even joints without steps or transverse grooves.</p> 	<p>Die-cut dovetailed joint.</p> 