



# ChemSafe™

## Chemical Air-Operated Double Diaphragm Pumps

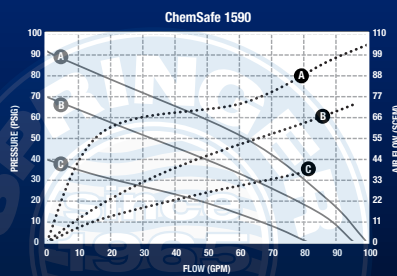
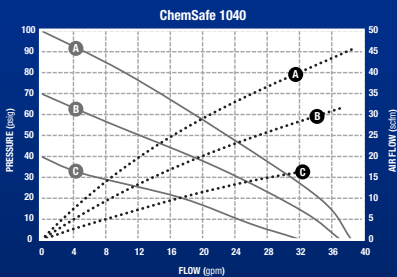
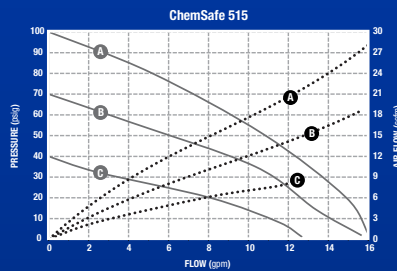
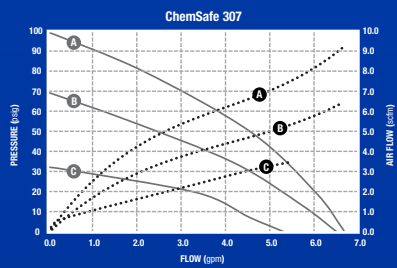
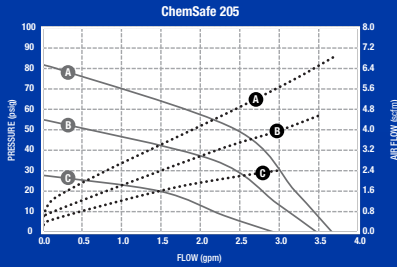


- CNC machined design ensures precision fit and superior chemical containment compared to molded pumps
- Corrosion-resistant exterior with no exposed metal reduces maintenance, extends pump life and offers clean, safe operation
- Removable air motor offers easy and intuitive maintenance, reducing downtime
- Available in 1/4 inch (6.3 mm), 3/8 inch (9.5 mm), 1/2 inch (12.7 mm), 1 inch (25.4 mm) and 1.5 inch (38.1 mm) models

PROVEN QUALITY. LEADING TECHNOLOGY.

# Pumping Solutions for Corrosive Chemicals

## Performance



AIR PRESSURE	LEGEND
(A) = at 100 psi	Air Consumption.....
(B) = at 70 psi	Fluid Pressure.....
(C) = at 40 psi	

## Safe and Reliable. Machined Design. No Exposed Metal.

Chemical transfer applications demand maximum performance and superior chemical containment. ChemSafe pumps feature 100% PTFE and UHMWPE fluid paths and are chemically safe. You can use these pumps with a variety of materials, plus they deliver unmatched chemical compatibility with challenging corrosive acids and destructive abrasive slurries. The precision-machined body features a tie-bolt design that ensures reliable sealing surfaces free of leaking.

## Applications and Materials

- Acid & Solvent Transfer
- Ceramic Finishing
- Electroplating
- Filter Press
- Steel Production
- Pharmaceutical
- Pickling Baths
- Printing Inks
- Silicone Carbide & Lime Slurries
- Wastewater Treatment



### 1 Leak Free

- Tie-bolt design ensures chemical containment
- Precision fit, machined design

### 3 Parallel Pilot Shifting

- Ease of maintenance
- Stall-free design
- Reduced icing air system

### 5 Field Serviceable

- Replaceable air motor, diaphragms, checks and pilot valve

### 2 Corrosion-Resistance

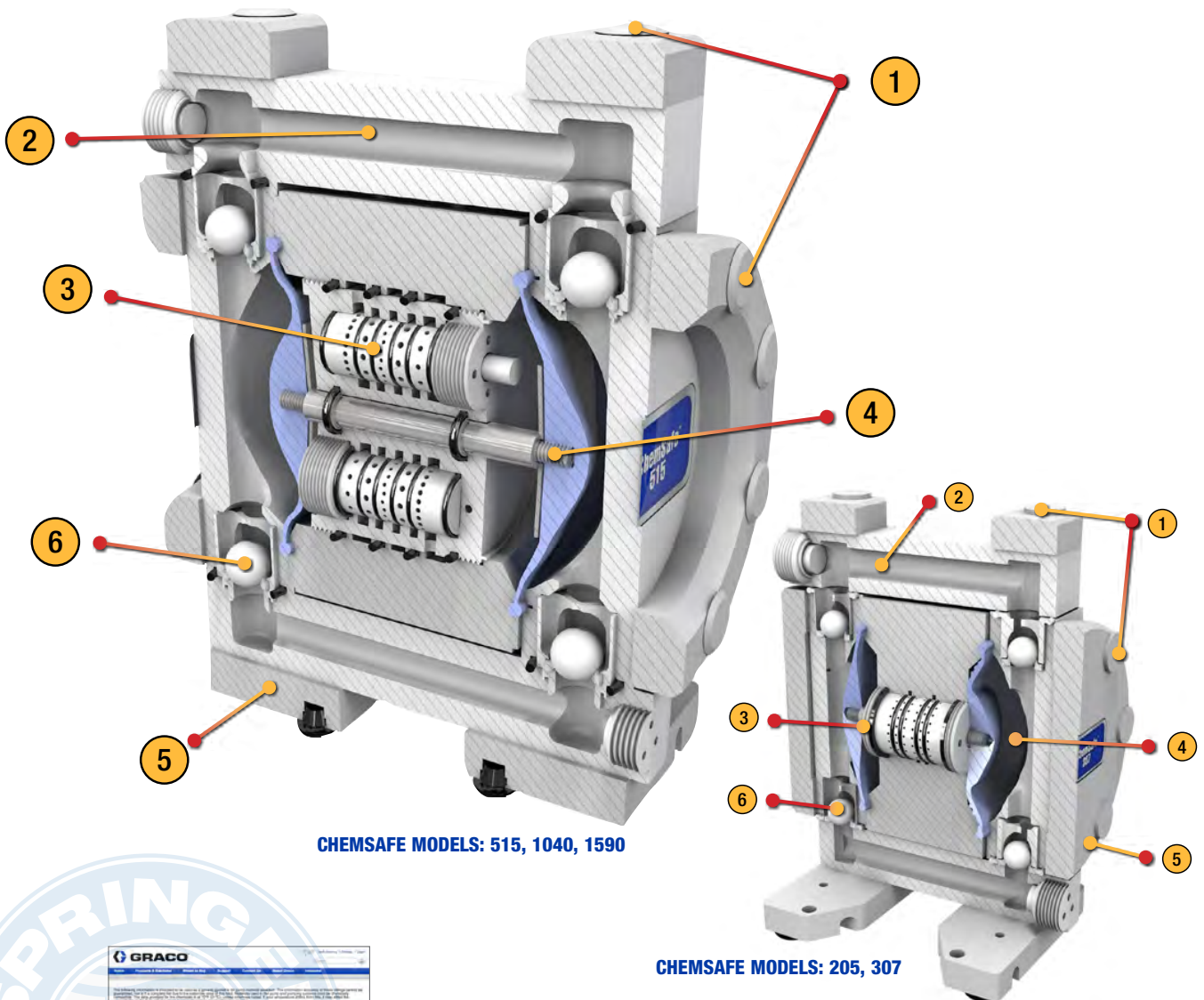
- 100% PTFE and PE fluid paths
- No exposed metals

### 4 Long Diaphragm Life

- Enhanced PTFE overmolded diaphragm improves life

### 6 Positive Seat-Check

- Improves pump performance and suction lift
- Reduces required maintenance



CHEMSAFE MODELS: 515, 1040, 1590

CHEMSAFE MODELS: 205, 307

Chemical	Compatibility
Acetic Acid	Compatible
Acetone	Compatible
Alcohol	Compatible
Ammonia	Compatible
Antifreeze	Compatible
Asphalt	Compatible
Automotive Oil	Compatible
Benzene	Compatible
Bleach	Compatible
Butane	Compatible
Calcium Hydroxide	Compatible
Chlorine	Compatible
Chloroform	Compatible
Coal Tar	Compatible
Coke Oven Gas	Compatible
Cyanide	Compatible
Diesel Fuel	Compatible
Dilute Sulfuric Acid	Compatible
Dilute Hydrochloric Acid	Compatible
Dilute Nitric Acid	Compatible
Dilute Phosphoric Acid	Compatible
Dilute Sodium Hydroxide	Compatible
Dilute Potassium Hydroxide	Compatible
Dilute Ammonium Hydroxide	Compatible
Dilute Hydrofluoric Acid	Compatible
Dilute Perchloric Acid	Compatible
Dilute Acetic Acid	Compatible
Dilute Formic Acid	Compatible
Dilute Oxalic Acid	Compatible
Dilute Sulfamic Acid	Compatible
Dilute Tartaric Acid	Compatible
Dilute Citric Acid	Compatible
Dilute Lactic Acid	Compatible
Dilute Malic Acid	Compatible
Dilute Succinic Acid	Compatible
Dilute Valeric Acid	Compatible
Dilute Fumaric Acid	Compatible
Dilute Maleic Acid	Compatible
Dilute Phthalic Acid	Compatible
Dilute Terephthalic Acid	Compatible
Dilute Isophthalic Acid	Compatible
Dilute Benzoic Acid	Compatible
Dilute Salicylic Acid	Compatible
Dilute Picric Acid	Compatible
Dilute Gallic Acid	Compatible
Dilute Ellagic Acid	Compatible
Dilute Pteric Acid	Compatible
Dilute Quinic Acid	Compatible
Dilute Tartaric Acid	Compatible
Dilute Citric Acid	Compatible
Dilute Lactic Acid	Compatible
Dilute Malic Acid	Compatible
Dilute Succinic Acid	Compatible
Dilute Valeric Acid	Compatible
Dilute Fumaric Acid	Compatible
Dilute Maleic Acid	Compatible
Dilute Phthalic Acid	Compatible
Dilute Terephthalic Acid	Compatible
Dilute Isophthalic Acid	Compatible
Dilute Benzoic Acid	Compatible
Dilute Salicylic Acid	Compatible
Dilute Picric Acid	Compatible
Dilute Gallic Acid	Compatible
Dilute Ellagic Acid	Compatible
Dilute Pteric Acid	Compatible
Dilute Quinic Acid	Compatible

## CHEMICAL COMPATIBILITY GUIDE

Go to our Chemical Compatibility Guide at [www.graco.com/chemicalcomp](http://www.graco.com/chemicalcomp) to see if the chemical pumping will work with our ChemSafe Pumps.

# Popular Models

Size	Part Number	Model	Fluid Path	Seat	Ball	Port	Diaphragm
1/4 inch (6.3 mm)	24X429	ChemSafe 205	PTFE	PTFE	PTFE	NPT	Overmolded PTFE/EPDM
	24X430	ChemSafe 205	PTFE	PTFE	PTFE	BSPT	Overmolded PTFE/EPDM
3/8 inch (9.5 mm)	24X501	ChemSafe 307	UHMWPE	UHMWPE	PTFE	NPT	Buna
	24X427	ChemSafe 307	PTFE	PTFE	PTFE	NPT	Overmolded PTFE/EPDM
	24X428	ChemSafe 307	PTFE	PTFE	PTFE	BSPT	Overmolded PTFE/EPDM
1/2 inch (12.7 mm)	24X425	ChemSafe 515	PTFE	PTFE	PTFE	NPT	Overmolded PTFE/EPDM
	24X426	ChemSafe 515	PTFE	PTFE	PTFE	BSPT	Overmolded PTFE/EPDM
	24X497	ChemSafe 515	UHMWPE	UHMWPE	PTFE	NPT	Overmolded PTFE/EPDM
1 inch (25.4 mm)	24X498	ChemSafe 515	UHMWPE	UHMWPE	PTFE	BSPT	Overmolded PTFE/EPDM
	24X423	ChemSafe 1040	PTFE	PTFE	PTFE	NPT	Overmolded PTFE/EPDM
	24X424	ChemSafe 1040	PTFE	PTFE	PTFE	BSPT	Overmolded PTFE/EPDM
	24X491	ChemSafe 1040	UHMWPE	UHMWPE	PTFE	NPT	Overmolded PTFE/EPDM
1-1/2 inch (38.1 mm)	24X492	ChemSafe 1040	UHMWPE	UHMWPE	PTFE	BSPT	Overmolded PTFE/EPDM
	24X421	ChemSafe 1590	PTFE	PTFE	PTFE	NPT	Overmolded PTFE/EPDM
	24X422	ChemSafe 1590	PTPE	PTPE	PTFE	BSPT	Overmolded PTFE/EPDM

# Technical Specifications

## MATERIAL

Balls: PTFE

Seats: PTFE

Diaphragms: OM PTFE/EPDM, EPDM, NBR

Body Type: PTFE or UHMWPE

Center Section: Polypropylene

Model	ChemSafe 205	ChemSafe 307	ChemSafe 515	ChemSafe 1040	ChemSafe 1590
Max Flow Rate*	3.7 gpm (14 lpm)	6.7 gpm (25 lpm)	16 gpm (60.6 lpm)	38.8 gpm (146 lpm)	99.5 gpm (376 lpm)
Displacement Per Cycle	0.008 gal (0.03 l)	0.019 gal (0.07 l)	0.042 gal (0.16 l)	0.148 gal (0.56 l)	0.433 gal (1.64 l)
Connection Sizes/Types	1/4" NPT, 1/4" BSPT	3/8" NPT, 3/8" BSPT	1/2" NPT, 1/2" BSPT	1" NPT, 1" BSPT	1-1/2" NPT, 1-1/2" BSPT
Max. Pumpable Solids	0.12 in (3.0 mm)	0.08 in (2.0 mm)	0.16 in (4.1 mm)	0.24 in (6.1 mm)	0.32 in (8.1 mm)
Suction Lift Dry*	6.5 ft (2.0 m)	10 ft (3.0 m)	11 ft (3.3 m)	13 ft (4.0 m)	16 ft (4.9 m)
Suction Lift Wet*	31 ft (9.5 m)	31 ft (9.5 m)	31 ft (9.5 m)	31 ft (9.5 m)	31 ft (9.5 m)
Weight (PTFE)	4.1 lb (1.9 kg)	6.8 lb (3.1 kg)	20 lb (9.1 kg)	40 lb (18 kg)	95.2 lb (43.2 kg)
Weight (UHMWPE)	4 lb (1.8 kg)	6 lb (2.7 kg)	13.7 lb (6.2 kg)	26.4 lb (12 kg)	66 lb (30 kg)
Max Air/Fluid Temperature	PTFE 212°F (100°C) UHMWPE 158°F (70°C)				
Min/Max Air Pressure	30 psi (2 bar) minimum startup air pressure 100 psi (7 bar) maximum supply air pressure				
Max. Sound Pressure	70.6 dB(a)	66.1 dB(a)	82.0 dB(a)	83.3 dB(a)	89.8 dB(a)
Max. Sound Power	64.2 dB(a)	58.1 dB(a)	74.8 dB(a)	78.3 dB(a)	91.1 dB(a)

\*May vary depending on materials.

All written and visual data contained in this document are based on the latest product information available at the time of publication. Graco reserves the right to make changes at any time without notice.

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