

SURE SEAL



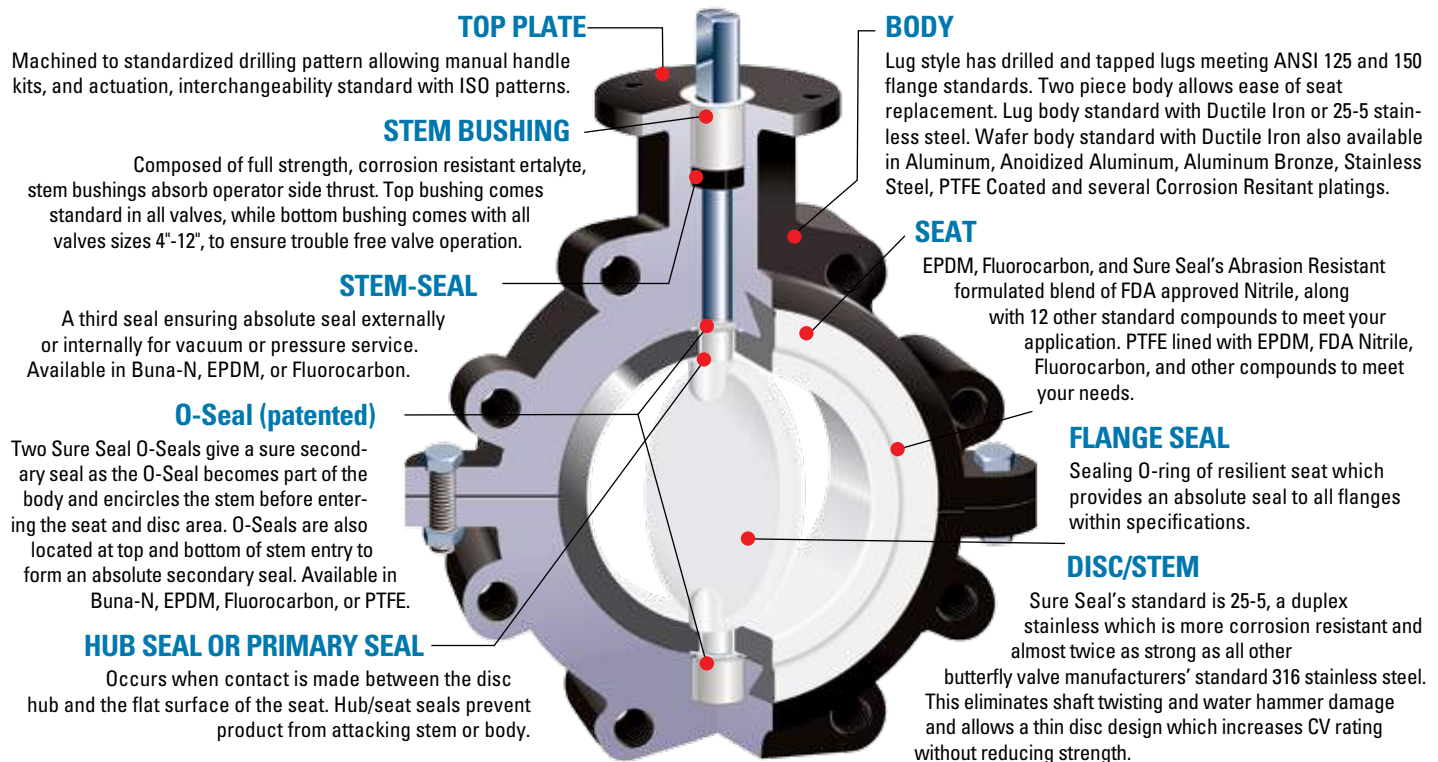
Sure Seal Series 899-892 Butterfly Valves

Sure Seal Series Butterfly Valves offer superior service for demanding applications for the chemical and food processing industries. Sure Seal valves are designed and manufactured with the highest standards in the industry and are guaranteed to exceed your application expectations. Sure Seal, part of OPW Fluid Transfer Group, stands behind all of the industrial valve products sold and serviced.

Sure Seal Series 899-892 (PATENTED)

A Superior Sanitary Valve for the Chemical and Food Processing Industry

Sizes 1"-24" 125/150 ANSI Interchangeable with Keystone Figure 999 and 992

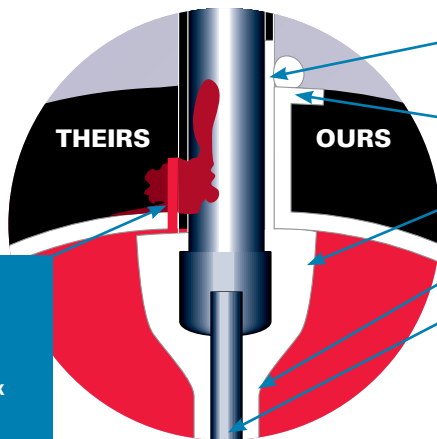


Patent #5207411. Every valve is tested to 110% of full pressure rating.



The Difference Between Our Encapsulated Valve and Theirs

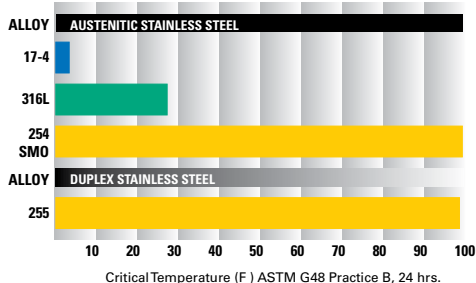
Without Sure Seal's Superior Encapsulated Design, Product and/or cleaners can enter into the stem hole and attack the seat and stem.



- 1 PTFE Encapsulation extends through stem hole to PTFE O-Seal top and bottom to assure positive seal to seat and patented O-Seal for total isolation of metal parts.
- 2 PTFE lining extends through stem hole to PTFE O-Seal for total isolation of rubber seat.
- 3 Total PTFE and elastomer covering of disc for both chemical resistance and sanitary food processing.
- 4 Slim disc for maximum flow.
- 5 Sure Seal's one piece disc and stem is standard 25-5 stainless steel which is several times more corrosion resistant and stronger than other manufacturers 316 stainless steel.
- 6 Precision machined stems top and bottom to assure the proper seal and alignment to the ertalyte bushing with patented O-Seals for total secondary seal.

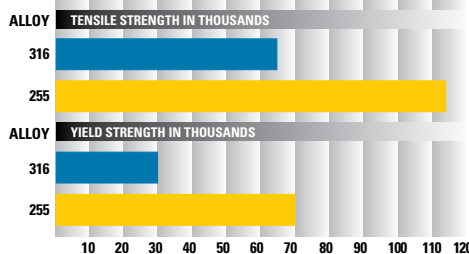
Corrosion Resistance

ASTM - DISC STEM COMPARISON IN TEST OF FERRIC CHLORIDE



Strength

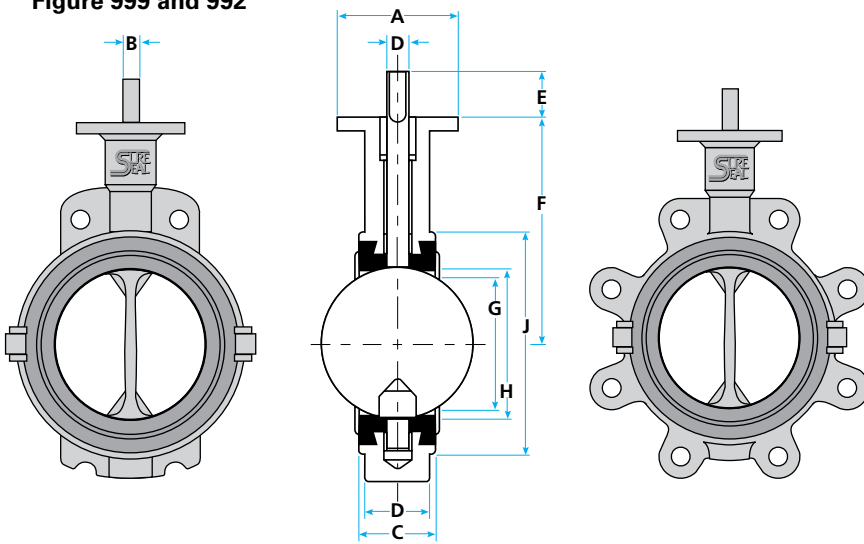
ASTM - MINIMUM MECHANICAL PROPERTIES



The chemical and food processing industry needed a truly sanitary valve and with Sure Seal's patented O-Seals they got just that. As the O-Seal seals at the back side of the seat top and bottom and also at the stem entry top and bottom it forms an absolute seal making it the truly sanitary valve on the market today.

Sure Seal Series 899-892 (PATENTED)

Sizes 1"-24" 125/150 ANSI Interchangeable with Keystone
Figure 999 and 992

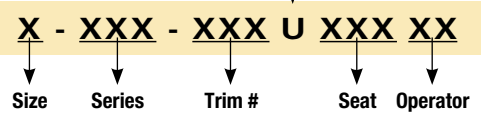


Sure Seal's standard 25-5 duplex stainless is more corrosion resistant and almost twice as strong as all other butterfly valve manufacturers standard 316 stainless steel. This eliminates shaft twisting and water hammer damage.

Sure Seal's slim disc design has one of the highest CV's and with rounded, hand polished disc and hub edges that reduce friction torque to maintain seat life. Seats are available in 14 different compounds. Now you can save on valves and replacement parts for your existing valves.

Ordering Information

Insert "U" for undercut disc only.
*Undercut available for 4"-24"



| SIZE | SERIES | TRIM MATERIAL | SEAT MATERIAL | OPERATOR |
|----------|--------|----------------------------|---------------|----------|
| 1 1" | 899 | Wafer Schd 80 | | |
| 1.5 1.5" | 892 | Lug Schd 80 | | |
| 2 2" | | | | |
| 2.5 2.5" | | | | |
| 3 3" | 822 | DI/DuplexSS/DuplexSS | | |
| 4 4" | 434 | DI/Nitrile/DuplexSS | | |
| 5 5" | 498 | DI/EPDM/DuplexSS | | |
| 6 6" | 508 | DI/PTFE/DuplexSS | | |
| 8 8" | 755 | DuplexSS/DuplexSS/DuplexSS | | |
| 10 10" | 705 | DuplexSS/PTFE/DuplexSS | | |
| 12 12" | | | | |
| 14 14" | | | | |
| 16 16" | | | | |
| 18 16" | | | | |
| 20 20" | | | | |
| 24 24" | | | | |

| SEAT MATERIAL | SEAT MATERIAL |
|--------------------|-----------------------|
| 515 EPDM | 561 Silicone |
| 700 Black Nitrile | 650 PTFE/EPDM |
| 701 White Nitrile | 652 PTFE/Nitrile |
| 540 Fluorocarbon A | 654 PTFE/Fluorocarbon |

| OPERATOR | OPERATOR |
|-------------------------------------|----------|
| H10 10 Position Steel Handle | |
| H9 10 Position 316 SS Handle | |
| GI CI Gear Operator | |
| G9 SS Gear Operator | |
| LH Padlock 10 Position Steel Handle | |
| PLG Padlockable Gear Operator | |

Valve Size

| | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|---|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------------|-------------|---------------|-------------|-------------|-------------|-------------|
| A | 2.560 | 2.560 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 8.000 | 8.000 | 8.000 |
| B | 0.250 | 0.250 | 0.375 | 0.375 | 0.375 | 0.438 | 0.500 | 0.500 | 0.625 | (1/4 x 1/4) | (1/4 x 1/4) | (5/16 x 5/16) | (3/8 x 3/8) | (1/2 x 1/2) | (1/2 x 1/2) | (1/2 x 1/2) |
| C | 1.125 | 1.188 | 1.625 | 1.750 | 1.750 | 2.000 | 2.125 | 2.125 | 2.500 | 2.500 | 3.000 | 3.000 | 4.000 | 4.250 | 5.000 | 5.940 |
| D | 0.375 | 0.375 | 0.563 | 0.563 | 0.563 | 0.625 | 0.750 | 0.750 | 0.875 | 1.125 | 1.125 | 1.375 | 1.625 | 1.875 | 2.000 | 2.000 |
| E | 0.750 | 0.750 | 1.250 | 1.250 | 1.250 | 1.250 | 1.250 | 1.250 | 1.250 | 2.000 | 2.000 | 3.000 | 3.000 | 4.250 | 4.250 | 4.310 |
| F | 3.540 | 4.120 | 3.938 | 4.500 | 4.875 | 6.000 | 6.000 | 6.500 | 8.313 | 9.000 | 10.625 | 12.000 | 14.750 | 14.500 | 15.750 | 19.250 |
| G | 0.625 | 1.438 | 1.375 | 2.063 | 2.563 | 3.625 | 4.750 | 5.500 | 7.500 | 9.594 | 11.563 | 13.125 | 15.000 | 17.000 | 18.875 | 23.110 |
| H | 1.188 | 1.750 | 2.000 | 2.500 | 3.000 | 4.000 | 5.000 | 5.750 | 7.750 | 9.750 | 11.750 | 13.220 | 15.250 | 17.180 | 19.130 | 23.200 |
| J | 2.437 | 3.218 | 4.125 | 4.825 | 5.250 | 6.750 | 7.625 | 8.625 | 10.812 | 13.375 | 16.188 | 16.880 | 19.052 | 21.440 | 23.500 | 28.180 |

Top Plate Drilling

NOTE: Both Standard and ISO drillings come on each valve

| | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Standard | | | | | | | | | | | | | | | | |
| No. Holes | N/A | N/A | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Bolt Circle | - | - | 3.250 | 3.250 | 3.250 | 3.250 | 3.250 | 3.250 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | - | - | - |
| Hole Dia. | - | - | 0.438 | 0.438 | 0.438 | 0.438 | 0.438 | 0.438 | 0.563 | 0.563 | 0.563 | 0.563 | 0.563 | - | - | - |
| ISO | | | | | | | | | | | | | | | | |
| No. Holes | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Bolt Circle | 1.970 | 1.970 | 2.760 | 2.760 | 2.760 | 2.760 | 2.760 | 2.760 | 4.020 | 4.020 | 4.020 | 4.020 | 4.020 | 6.500 | 6.500 | 6.500 |
| Hole Dia. | 0.281 | 0.281 | 0.375 | 0.375 | 0.375 | 0.375 | 0.375 | 0.375 | 0.406 | 0.406 | 0.406 | 0.406 | 0.406 | 0.812 | 0.812 | 0.812 |

Wafer Bolt Circle and Tapped Lug Data

| | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 | |
|-------------|-------|-------|--------------|-------|-------|-------|--------------|-------|--------|-------------|--------|--------|--------|--------|-----------|--------|-----------|
| No. Holes | 4 | 4 | 4 | 4 | 4 | 8 | 8 | 8 | 8 | 12 | 12 | 12 | 16 | 16 | 20 | 20 | |
| Bolt Circle | 3.125 | 3.875 | 4.750 | 5.500 | 6.000 | 7.500 | 8.500 | 9.500 | 11.750 | 14.250 | 17.000 | 18.750 | 21.250 | 22.750 | 25.000 | 29.500 | |
| Tap | N/A | N/A | 0.625-11 UNC | | | | 0.750-10 UNC | | | 0.875-9 UNC | | | 1-8UNC | | 1.1258UNC | | 1.25-8UNC |

Weight in Pounds

| | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|----------|-----|-----|---|-----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|
| Standard | | | | | | | | | | | | | | | | |
| 899 | 2 | 4 | 6 | 8 | 9 | 11 | 15 | 17 | 29 | 44 | 85 | 115 | 170 | 236 | 313 | 466 |
| 892 | N/A | N/A | 8 | 10 | 11 | 17 | 21 | 26 | 42 | 65 | 108 | 141 | 225 | 281 | 382 | 574 |

Expected Seat/Unseat Torque Values in in/lbs

| | 1 | 1.5 | 2 | 2.5 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|------------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Dry | 180.0 | 240.0 | 300.0 | 360.0 | 420.0 | 630.0 | 855.0 | 1185.0 | 1980.0 | 3045.0 | 4095.0 | 4956.0 | 6396.0 | 7860.0 | 9360.0 | 11892.0 |
| Lubricated | 90.0 | 120.0 | 150.0 | 180.0 | 210.0 | 315.0 | 429.6 | 594.0 | 990.0 | 1524.0 | 2052.0 | 2484.0 | 3240.0 | 3960.0 | 4680.0 | 6000.0 |

GENERAL NOTES: C = Installed Width · G = Minimum Allowable Inside DIA. of Pipe or Mating Flange
1"-8" — D = Stem Connection DIA. · B = Flats · 10" - 12" — D = Stem Connection Dia. · Keyway = .250 X .250

* Weight based on 25-5 Stainless Steel disc/stem and Ductile Iron Body.

For stainless steel mounting dimensions please refer to the stainless steel brochure

VELOCITY LIMITS: *

For On/Off Services · Fluids - 9 m/s (30 ft/sec) · Gases - 54 m/s (175 ft/sec)

PRESSURE LIMITS: Full cut Stainless Steel disc (150 psi) · Undercut Stainless Steel disc (50 psi) · Coated disc ie. PTFE or rubber (100 psi)

Purchasers are expected to make their own tests to determine the suitability of these products for their particular purposes. The data represented in this flyer is for general information only. Manufacturer is not responsible for acceptability of these products in regard to individual system requirements. For specific performance data and correct materials selection, please contact your Sure Seal Dealer.

OPW Fluid Transfer Group (OPWFTG), part of Dover Corporation (NYSE:DOV), is comprised of market-leading operating companies, each dedicated to designing, manufacturing and distributing world-class solutions for the safe handling and transporting of hazardous bulk products. In addition to these companies, OPWFTG has manufacturing plants in North America, Europe, Brazil and India; and sales offices in Singapore, and China.

Throughout the world, OPWFTG companies are hard at work ensuring the safe processing, loading, transporting and unloading of hazardous bulk products and safeguarding against costly petroleum and chemical spills, tank overfills and fugitive vapor emissions. Whether your need is in the chemical plant, at the terminal loading rack, or outfitting a fleet of rail tank cars, cargo tanks or dry-bulk trailers, OPWFTG systems set the standard for safety, performance and peace-of-mind assurance in the most rigorous and demanding applications. If the safe, profitable handling of hazardous liquids and dry bulk commodities such as gasoline and diesel, chlorine, chlor-alkali products, LPG, acids, cement, flour and starch, among others, is your concern, trust OPWFTG.

EXPERT SOLUTIONS FOR THE SAFE HANDLING & TRANSPORTING OF HAZARDOUS BULK PRODUCTS

| | Applications | Processing | Load | Transporting | | Unload |
|---------------------------|---|---|---|---|---|---|
| PETROLEUM | <ul style="list-style-type: none"> Gasoline Ethanol Alcohols Fuel Oil LPG Diesel Biodiesel | <ul style="list-style-type: none"> Bellow Sealed Valves Sample Valves Lined Ball Valves Lined Butterfly Valves Industrial Valves ISO Rings Sight Flow Indicators Globe Valves Swivels Dry Disconnects | <ul style="list-style-type: none"> Loading Arms Couplers Rack Monitors Dry Disconnects API Coupler Swivels | Cargo Tanks <ul style="list-style-type: none"> Manholes Vapor Vents Electronics Internal Valves API Adaptors Sealed Parcel Pneumatic Controls Manifold Systems | Rail Tank Cars <ul style="list-style-type: none"> Pressure Relief Valves Plug Valves Ball Valves Level Measurement Autoloks Kamvaloks Dryloks Rupture Disc Devices Angle Valves | <ul style="list-style-type: none"> Drylok Couplers Adaptors Delivery Elbows Vapor Recovery Elbows Swivels |
| CHEMICALS | <ul style="list-style-type: none"> Chlorine Acids & Bases Amines Anhydrous Ammonia Propylene Butadiene Hazardous Liquids | <ul style="list-style-type: none"> Bellow Sealed Valves Sample Valves Lined Ball Valves Lined Butterfly Valves Industrial Valves ISO Rings Sight Flow Indicators Globe Valves Swivels Dry Disconnects Quick Disconnects Epsilon | <ul style="list-style-type: none"> Loading Arms Autoloks Kamvaloks Dryloks Loading Manholes Valves Actuators Swivels Epsilon | Cargo Tanks <ul style="list-style-type: none"> Manholes Vapor Vents Electronics Internal Valves Sealed Parcel Epsilon | Rail Tank Cars <ul style="list-style-type: none"> Safety Valves Plug Valves Ball Valves Level Measurement Autoloks Kamvaloks Dryloks Rupture Disc Devices Angle Valves Epsilon | <ul style="list-style-type: none"> Loading Arms Autoloks Kamvaloks Dryloks Valves Actuators Safety Breakaways Swivels Epsilon |
| DRY BULK | <ul style="list-style-type: none"> Cement Flour/Starch Pharmaceuticals | <ul style="list-style-type: none"> Industrial Valves Sight Flow Indicators Butterfly Valves Swivels | <ul style="list-style-type: none"> Loading Arms Aerators Hatch Covers Swivels | Cargo Tanks <ul style="list-style-type: none"> Manholes Check Valves Hopper Tees Butterfly Valves Aerators Weld Rings | Railcars <ul style="list-style-type: none"> Manholes Hatches Access Ports Check Valves Hopper Tees Butterfly Valves Aerators Pressure Vacuum Valves | <ul style="list-style-type: none"> Aerators Butterfly Valves Tank Hatches Pressure Relief Vacuum Relief Temperature Monitoring |
| INDUSTRIAL/GENERAL | <ul style="list-style-type: none"> Food Processing Pharmaceuticals Waste Water High-Purity Liquids Breweries Pulp and Paper Steel Processing | <ul style="list-style-type: none"> Lined Ball Valves Lined Butterfly Valves Sample Systems Sight Flow Indicators ISO Rings Dry Disconnects Swivels Dry Disconnects High-Performance Butterfly Valves Epsilon | <ul style="list-style-type: none"> Loading Arms Couplers Rack Monitors Swivels Dry Disconnects Quick Disconnects Butterfly Valves Epsilon | Cargo Tanks <ul style="list-style-type: none"> Manholes Vapor Vents Electronics Weld Rings Hopper Tees Pneumatic Controls Sealed Parcel Dry Disconnects Epsilon | Rail Tank Cars <ul style="list-style-type: none"> Safety Valves Plug Valves Ball Valves Level Measurement Autoloks Kamvaloks Dryloks Rupture Disc Devices Angle Valves Epsilon | <ul style="list-style-type: none"> Loading Arms Couplers Rack Monitors Swivels Dry Disconnects Quick Disconnects Butterfly Valves Epsilon |

Chemical & Industrial Processing Market Unit

- Food Processing
- Chemical Plants
- Petroleum Loading Stations
- Steel Processing, Pulp & Paper
- Waste Water Treatment
- Pharmaceutical
- Breweries
- High-Purity Liquids
- Ethanol Processing
- Biodiesel Processing

Rail Market Unit

- Pressure & General Purpose Rail Tank Cars
- Dry Bulk Railcars
- Ethanol Rail Tank Cars
- Diesel
- Biodiesel

Cargo Tank Market Unit

- Gasoline & Diesel
- Dry Bulk
- Ethanol
- Biodiesel



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