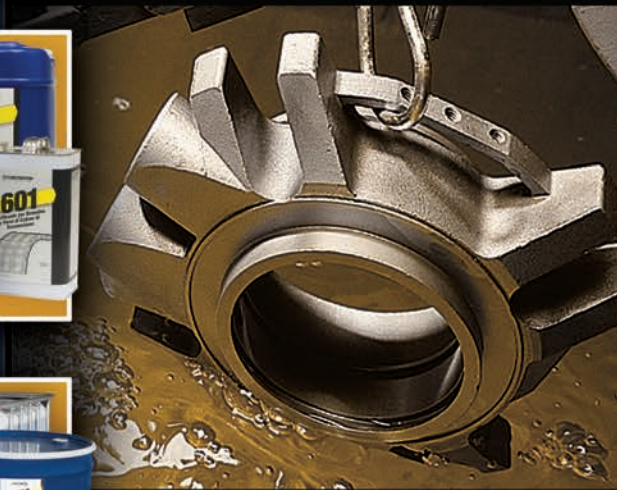
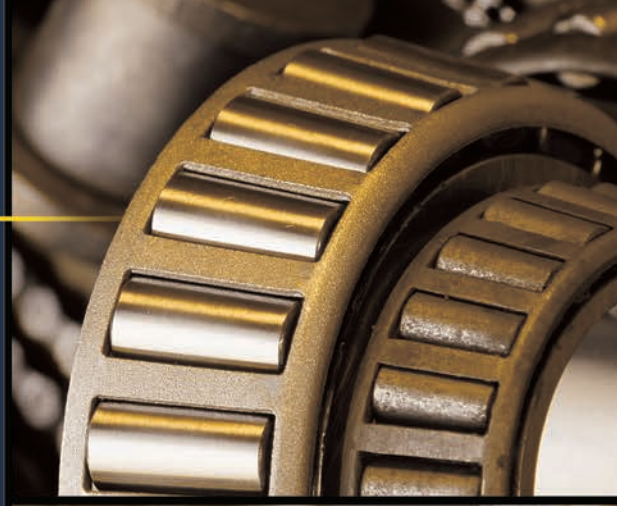


MRO CHEMICALS

INDUSTRIAL LUBRICANTS, CLEANERS,
METAL WORKING FLUIDS
AND MAINTENANCE SPECIALTIES



Quality Products, Industry Solutions and Superior Services...

The A.W. Chesterton Company was established on the Boston, Massachusetts waterfront in 1884. Today, Chesterton manufactures products that are stocked, sold and serviced by highly trained Chesterton Specialists in more than 97 countries worldwide. We are dedicated to learning the specific requirements of your application in order to tailor recommendations and help you achieve your expected results.

Chesterton's extensive network provides the best applications assistance and service available throughout the process and manufacturing industries. The local, trained Chesterton Specialist, field and product managers, as well as factory support staff are dedicated to worldwide ultimate Customer Care.



*For EMEA
Application Engineering:*
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Fax: 1-781-481-7608
Website: www.chesterton.com



*For North America and
Worldwide Customer Service
and Application Engineering:*
Telephone: 978-469-6666
Fax: 978-469-6785
Website: www.chesterton.com



All statements in this catalog pertaining to pressure, chemical compatibility, temperature, and service ratings are based on general service experience. Because of the wide variety of applications of our products, the broad range of products available, and the wide range of equipment conditions encountered, together with the unpredictable human factors involved in the installation of these products by the ultimate user, we do not encourage reliance on recommendations shown without specific prior service experience.

Specific data on materials, construction methods, installation and troubleshooting procedures are subject to change without notice.

For the reasons indicated, the A.W. Chesterton Company makes no warranties, expressed or implied, that products described are guaranteed for any length of time, for any measure of service, or for any specific purpose.

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MRO CHEMICALS

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OVERVIEW

Chesterton offers products and total system solutions for production process, facility, and maintenance needs.

- INDUSTRIAL LUBRICANTS
- CLEANERS AND DEGREASERS
- MAINTENANCE SPECIALTIES
- METAL WORKING FLUIDS
- CORROSION CONTROL

State-of-the-art technologies, environmentally acceptable alternatives and strict quality processes contribute to fulfilling the customers' expectations:

Increased productivity

Lowered costs

Reduced disposal and labor costs

In partnership with our worldwide distribution channels and factory-trained local specialists, Chesterton offers superior value, outstanding customer service, technical support and delivery.

In these pages you will find an overview of our technical products. For in-depth, individual product information, ask your local Chesterton Specialist for our informative product data sheets.

Efficiency, performance and productivity today... tomorrow... always!



INDUSTRIAL LUBRICANTS



MOLY GREASE

Long lasting multi-purpose, extreme pressure grease; fortified with molybdenum disulfide to handle challenging applications ranging from -18°C to 138°C (0°F to 280°F).

PRODUCT CHARACTERISTICS

Contains inhibitors protect lubricated equipment
Excellent resistance to water washout
Saves cost of replacement parts
Prolongs the life of parts and machinery



APPLICATIONS

Conveyors
Mining equipment
Plain and anti-friction bearings
Cams
Guides
Ways
Slides
Electric motors
Fans
Blowers
Pumps
Generators
Presses and shears
Ideal for equipment subject to extra pressures, and shock loading vibration at start-up or during operation

CONTAINER SIZE	REORDER NUMBER
613	
400 Gram	089409
18 Kilogram	089407

HTG #1, #2, #2-460

High-performance, corrosion inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance. Temperature limit -40°C (-40°F) to 204°C (400°F).

The 615 HTG #2-460 is based on a heavier ISO 460 base oil and is designed for use on slower moving heavily loaded bearings.

PRODUCT CHARACTERISTICS

Superior water resistance
Excellent corrosion protection
Compatible with most popular greases
Exceptional shear resistance
Dropping point 288°C (550°F)
NSF Registered
QBT™ Quiet Bearing Technology
Will not bleed or age harden
Outstanding extreme pressure and temperature characteristics
HTG #1 is easily pumpable in automatic grease dispensing systems



APPLICATIONS

High water environment plants

Pulp and paper mills
Mining operations
Transportation
Coal and ore processing
Construction
Metal fabrication
Steel mills

Industrial and marine

Conveyors
Grinding mills
Crushers
Bearings
Shears
Blowers
Rolling mills
Traveling cranes
Mechanical presses
Cams
Toggle joints
Guides
Ways
Slides

CONTAINER SIZE	REORDER NUMBER
615 HTG #1	
400 Gram	086935
18 Kilogram	086936
55 Kilogram	086007
180 Kilogram	080725

CONTAINER SIZE	REORDER NUMBER
615 HTG #2	
400 Gram	080042
18 Kilogram	080043
55 Kilogram	080045
181 Kilogram	080728

CONTAINER SIZE	REORDER NUMBER
615 HTG #2-460	
400 Gram	084204
18 Kilogram	084205
181 Kilogram	084190

622

WHITE GREASE

Superior quality, multi-purpose, H1 food grade lubricant, clean, pure mineral oil.



PRODUCT CHARACTERISTICS

NSF Registered H1
Resistant to water, steam, caustics and cleaning agents
Virtually colorless, odorless, tasteless
Complies with sections 178.3570 and 177.1550, of FDA food additives regulations
Dropping point 260°C (500°F)



APPLICATIONS

Food industry

Bottling equipment
Fruit feeders
Paste and sauce fillers
Canning machinery
Meat packaging equipment
Carton filling equipment

General

Valves
Pistons
Pumps
Conveyor belts
Rollers
Machinery
Slides
Guides

CONTAINER SIZE 622	REORDER NUMBER
400 Gram	085312
900 Gram	085314
18 Kilogram	085304
55 Kilogram	085335

629

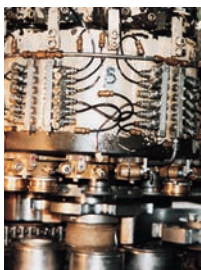
HIGH TEMPERATURE WHITE GREASE

High temperature, premium quality, pure mineral oil and PTFE fortified grease. Offers excellent resistance to water, steam, caustics and other cleaning agents.



PRODUCT CHARACTERISTICS

Chemically stable, non-reactive with metal, rubber and plastics
Virtually colorless
Odorless
Tasteless
Complies with sections 178.3570 and 177.1550, of FDA food additives regulations
Smooth tacky texture
Adheres to metal
NSF Registered
Dropping point over 260°C (500°F)



APPLICATIONS

Processing and packaging machinery
Slides
Guides
Anti-friction bearings
Grease lubricated chains
Bottle and carton filling machines
Paste and sauce fillers
Conveyor belts
Rollers
Canning machinery
Any moving parts of equipment
processing clean materials or packages

CONTAINER SIZE 629	REORDER NUMBER
400 Gram	081127
18 Kilogram	081128
55 Kilogram	081187

625

CXF



High-performance, corrosion inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance. 625 is NSF Registered H1 and complies with FDA regulations 178.3570. Temperature limit -30°C (-22°F) to 204°C (400°F).

PRODUCT CHARACTERISTICS

- NSF Registered H1
- Superior water washout resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Anti-oxidants prevent hardening or crystallization
- Dropping point 318°C (604°F)
- QBT™ Quiet Bearing Technology



APPLICATIONS

- Food, pharmaceutical, beverage industries
- Pharmaceutical processing and packaging machines
- Bottling equipment
- Fruit feeders
- Paste and sauce fillers
- Canning machinery
- Meat packaging equipment
- Carton filling equipment

CONTAINER SIZE 625	REORDER NUMBER
400 Gram	088548
18 Kilogram	088549
55 Kilogram	088550
180 Kilogram	088551

630

SXCF



High-performance, corrosion inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance. 630 is synthetic based, and offers superior high temperature stability and resistance to steam and cleaning chemicals. 630 is NSF Registered H1 and complies with FDA regulations 178.3570. Temperature limit -40°C (-40°F) to 240°C (464°F).

PRODUCT CHARACTERISTICS

- NSF Registered H1
- Superior water washout resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Anti-oxidants prevent hardening or crystallization
- Dropping point 318°C (604°F)
- QBT™ Quiet Bearing Technology



APPLICATIONS

- Food, pharmaceutical, beverage industries
- Pharmaceutical processing and packaging machines
- Bottling equipment
- Fruit feeders
- Paste and sauce fillers
- Canning machinery
- Meat packaging equipment
- Carton filling equipment

CONTAINER SIZE 630	REORDER NUMBER
Aerosol	088687
400 Gram	088552
18 Kilogram	088553
55 Kilogram	088554
180 Kilogram	088555

633

SXCM

High-performance, corrosion inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance. 633 is synthetic based with MoS₂, and offers superior high and low temperature stability and resistance to steam and corrosive chemicals. Temperature limit -50°C (-58°F) to 250°C (482°F).



PRODUCT CHARACTERISTICS

- Superior water washout resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Anti-oxidants prevent hardening or crystallization
- Dropping point 288°C (550°F)
- QBT™ Quiet Bearing Technology



APPLICATIONS

- Pulp and paper mills
- Mining operations
- Transportation
- Coal and ore processing
- Construction
- Metal fabrication
- Steel mills

Industrial and marine

- Heavy off road machines
- Conveyors
- Grinding mills
- Crushers
- Bearings
- Shears
- Blowers
- Rolling mills
- Traveling cranes

CONTAINER SIZE	REORDER NUMBER
633	
400 Gram	088560
18 Kilogram	088563
55 Kilogram	088564

635

SXC

High-performance, corrosion inhibited grease with outstanding extreme pressure capabilities and excellent water washout resistance. 635 is synthetic based, and offers superior high temperature stability and resistance to steam and corrosive chemicals. Temperature limit -40°C (-40°F) to 240°C (464°F).



PRODUCT CHARACTERISTICS

- Superior water washout resistance
- Excellent corrosion protection
- Compatible with most popular greases
- Exceptional shear resistance
- Anti-oxidants prevent hardening or crystallization
- Dropping point 318°C (604°F)
- QBT™ Quiet Bearing Technology



APPLICATIONS

- Pulp and paper mills
- Mining operations
- Transportation
- Coal and ore processing
- Construction
- Metal fabrication
- Steel mills

Industrial and marine

- Ovens
- Hot process fluid systems
- Fans
- Conveyors
- Grinding mills
- Crushers
- Bearings
- Shears
- Blowers
- Rolling mills
- Traveling cranes

CONTAINER SIZE	REORDER NUMBER
635	
400 Gram	088556
18 Kilogram	088557
55 Kilogram	088558
180 Kilogram	088559

601

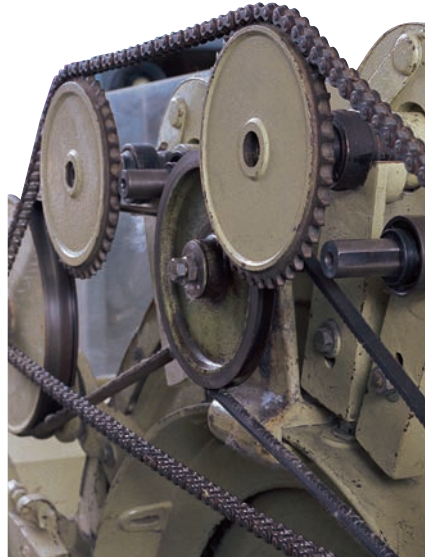
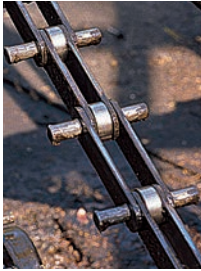
CHAIN DRIVE PIN & BUSHING LUBRICANT



Premium quality light oil, penetrates between the close clearance of chain drive bushings and pins to provide critical lubrication. The lubricant of choice in the industry for over 30 years.

PRODUCT CHARACTERISTICS

Rapid penetration
Pressure additives increase load carrying ability at start up stresses
No dirt and dust build up in chains
No sticky lubricant residues
Corrosion inhibiting properties
Extends chain life 2 to 4 times
Long lasting, non-drying film
NSF Registered



APPLICATIONS

Chain drives
for assembly lines
Conveyors
Packaging equipment
Hoist chains
Link and roller assemblies
Forklift trucks
Tractors
Machinery
Chain saws
Robotic equipment
lubricant

CONTAINER SIZE REORDER NUMBER

CONTAINER SIZE	REORDER NUMBER
601	
Aerosol	081902
1 Gallon/3.8 Liter	081904
20 Liter	081910
208 Liter	081907

610

SYNTHETIC LUBRICATING FLUID

610HT

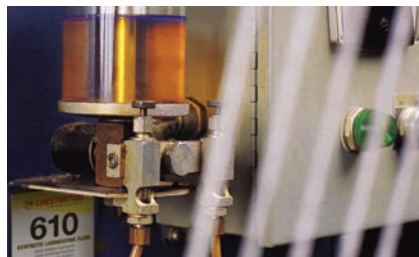
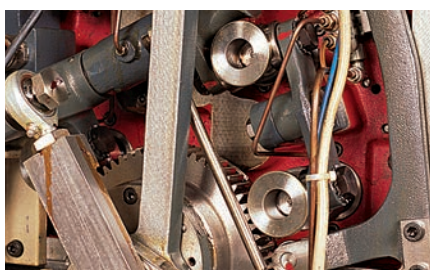
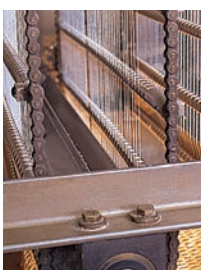
Premium quality 100% synthetic fluid cleans as it lubricates over a wide temperature range of -25°C to 270°C (-13°F to 518°F).

610MT Plus

PRODUCT CHARACTERISTICS

Self cleaning
No residue
Non-carbonizing
NSF Registered
Low evaporation rate
High flash point
Good flowability for low temperature applications to -25°C (-13°F)
610MT Plus and 610HT higher viscosities, reducing dripping, recommended for chains operating continuously over 180°C (356°F)
Viscosity, ISO VG

610	68
610MT Plus	220
610HT	460



APPLICATIONS

On equipment operating in elevated temperatures, refrigerated areas and in severe environments

Oven chains
Anti-friction bearings
Gearboxes
Conveyor roller bearings
Chain conveyors
Drying ovens
Ceramic ovens
Heat treating conveyors
Electric motors
Fans
Plastic extrusion equipment
Plastic film forming
Textile tenter frames

CONTAINER SIZE REORDER NUMBER

CONTAINER SIZE	REORDER NUMBER
610	
Aerosol	089411
1 Gallon/3.8 Liter	089415
20 Liter	089414
208 Liter	089424

CONTAINER SIZE REORDER NUMBER

CONTAINER SIZE	REORDER NUMBER
610HT	
1 Gallon/3.8 Liter	083765
20 Liter	080418
208 Liter	080419

CONTAINER SIZE REORDER NUMBER

CONTAINER SIZE	REORDER NUMBER
610MT Plus	
20 Liter	082852
208 Liter	082853

636

FG SLF-220



636 FG is an ISO grade 220, high performance synthetic lubricant. It is NSF H1 registered, and specifically designed as for high temperature bearing, chain lubrication throughout the food, beverage and pharmaceutical industries.

PRODUCT CHARACTERISTICS

- Self-Cleaning
- No Residue
- Non-Carbonizing
- NSF Registered H1
- Low Evaporation rate
- High Flash point
- Temperature Range -25C to >260C (-13F to 500F)



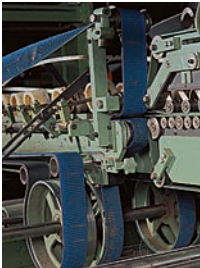
APPLICATIONS

- High temperature lubrication such as:
 - Baking ovens
 - Heat sealing machines
 - Sterilization areas
 - Conveyor roller bearings
 - Chain conveyors
 - Heat treating conveyors
 - Plastic film sealing

CONTAINER SIZE	REORDER NUMBER
Aerosol	084128
20 Liter	084129
208 Liter	084127

651

DETERGENT LUBRICATING OIL



All purpose, light duty lubricant with active detergent additives to clean, penetrate, lubricate, and prolong the life of all types of parts and equipment.

PRODUCT CHARACTERISTICS

- Cleans as it lubricates
- Will not build-up
- Penetrates close tolerances
- Cleans old sludge and gumming
- Ideal for high speed industrial bearings
- NSF Registered
- Safe and easy to use
- Reduces maintenance and replacement parts cost



APPLICATIONS

- General**
 - Pneumatic equipment
 - Electric motors
 - Chronometers
 - Amplifiers
 - Machine shops
 - Instrument repair shops
 - Boiler rooms
 - Assembly lines
 - Bearings
 - Linkages
 - Levers
 - Hinges

NOTE

For chain drive applications Chesterton's 601 Chain Drive Pin & Lubricant may also be used

CONTAINER SIZE	REORDER NUMBER
651	
Aerosol	081102
20 Liter	081111
208 Liter	081107

652

PNEUMATIC LUBRICANT & CONDITIONER

High performance, low viscosity formulation reduces up to 90% of pneumatic maintenance costs, decreases downtime and rejects. Cleans, protects and prolongs the life of pneumatic equipment.

PRODUCT CHARACTERISTICS

Will not cause sludge build-up
NSF Registered
Conditioners prevent seals and O-rings from drying out
Significantly reduces power consumption
Prolongs life of air tools
Cleans rust, sludge and dirt from all air tools as it lubricates

APPLICATIONS

Air tools
Cylinders
Air line lubricators
Air impact wrenches
Air hammers
Air drills
Air grinders
Production air systems
CNC machines
Robotics
Assembly line tools



CONTAINER SIZE	REORDER NUMBER
652	
475 Milliliter	086888
1 Gallon/3.8 Liter	080447
20 Liter	086000
208 Liter	083018

660

SILICONE LUBRICANT

Clean, clear, colorless food-grade lubricant for plastics, rubber, and food processing equipment that works where petroleum oils won't.

PRODUCT CHARACTERISTICS

Broad temperature range
-40°C (-40°F) to 205°C (401°F)
NSF Registered H1
Complies with sections 178.3570, 181.28 and 178.3910 of FDA food additives regulations
Makes surfaces water-resistant
Non-staining, fire-resistant, non-toxic
Penetrates fine tolerances
Long-lasting

APPLICATIONS

Plastic to plastic, plastic to metal, and rubber to metal lubrication
Food processing
Plastic gears
Rollers
Cams
Hinges
Slides
Bearing mixers
Conveyors
Other
High-speed injection molding
Medical and pharmaceutical equipment
Rubber gasketing
Sliding doors



CONTAINER SIZE	REORDER NUMBER
660	
Aerosol	081502
1 Gallon/3.8 Liter	081504
20 Liter	081519
208 Liter	081506

662FG

BARRIER FLUID

662 FG is an ISO grade 22, high performance lubricant specifically designed as a barrier fluid for mechanical seals. We now offer a complete Chesterton solution—mechanical seal, barrier fluid tank, and barrier fluid.



PRODUCT CHARACTERISTICS

Ultra clean for long seal face life:

Ultra clean barrier fluid—extremely low particle count designed to minimize face wear and extend seal life

ISO 4406 particle count 14/12/10

Food grade (FG)—minimize contamination concerns:

NSF H1 registered, incidental food contact
FDA: Conforms to FDA 21 CFR 178.3620 a & b 178.3570

Good thermal stability:

Minimize carbon formation and resulting seal clogging and hang up

Maintains seal face lubrication

Viscosity: < 4 cSt (ISO 22) at 100°C, ideal for convective heat transfer

Cost Effective:

Long term stability minimizes replacement seal and fluid costs

Compatibility:

Compatible with most fluids (mineral oil, PAO, and diester: not miscible with glycols or silicones)



APPLICATIONS

Mechanical seal
barrier fluid
For high temperatures, above 120°C (250°F) use 610 Synthetic Fluid

CONTAINER SIZE	REORDER NUMBER
662FG	
20 Liter	081088
208 Liter	081089

690FG

LUBRICANT

Cost effective, high quality, multi-purpose, non-staining penetrating lubricant. USDA authorized for incidental food contact and meets FDA standards.



PRODUCT CHARACTERISTICS

Clear, colorless, odorless
Complies with section CFR 178.3620 of FDA food additives regulations
High flash point, 171°C (340°F)
Safe and easy to use in bulk or aerosol
NSF Registered H1



APPLICATIONS

Food industry
Bottle, canning and carton filling machines
Paste and sauce fillers
Fruit feeders
Bakery equipment
Mixers
Metering pumps
Chain drives
Piston and valves
Rollers

NOTE

For food processing equipment and non-staining applications requiring a long lasting grease, use 622 White Grease or 629 High Temperature White Grease
For food contact at higher temperature applications, use 660 Silicone Lubricant, up to 205°C (401°F)

CONTAINER SIZE	REORDER NUMBER
690FG	
Aerosol	082706
1 Gallon/3.8 Liter	082703
20 Liter	082710
208 Liter	082705

710

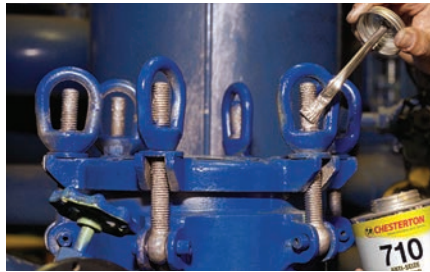
ANTI-SEIZE COMPOUND



High temperature, extreme pressure, corrosion resistant anti-seize compound and assembly lubricant. Formulated blend of copper, aluminum, and graphite seals and protects metal parts.

PRODUCT CHARACTERISTICS

- Eases disassembly up to 1100°C (2012°F)
- Meets MIL-A-907D
- Maintains electrical conductivity between surfaces
- On U.S. Navy qualified products list: QPL-907 NSF Registered
- Retards pitting
- Saves threads and parts for reuse by guarding against galling damage and breakage during opening



APPLICATIONS

- Refineries
- Steel Mills
- Mining
- Chemical and petroleum
- Utilities
- Vehicles/Transportation
- Marine
- Valves
- Threaded assemblies
- Press fit bushings
- Bearing fits
- Pump sleeves
- Forge presses
- Hydraulic equipment
- Heat exchangers
- Reactor towers

NOTE

Chesterton's 725 Nickel Anti-Seize Compound or 785 Parting Lubricant is recommended on stainless steel and in aggressive acid or alkaline environments

CONTAINER SIZE	REORDER NUMBER
710	
500 Gram Brush Top	082309

785

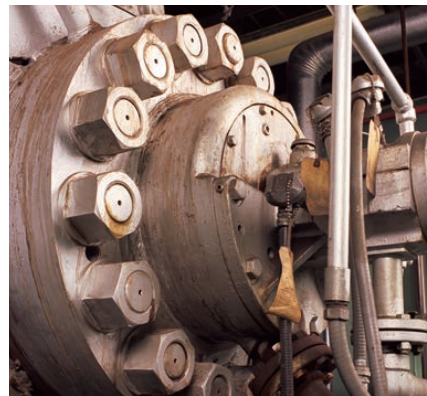
PARTING LUBRICANT

785FG

The "new generation" anti-seize compound contains a blend of ultrafine, inorganic solid lubricants in a non-carbonizing, ashless synthetic carrier. Withstands severe temperature and pressure conditions.

PRODUCT CHARACTERISTICS

- Provides excellent protection of metal components under extreme conditions
- Eases disassembly up to 1204°C (2200°F)
- Fills in microscopic voids
- No toxic heavy metals
- For extreme pressure up to 4730 kg/cm² (67,570 psi)
- Safer than traditional metallic based anti-seizes
- Non-carbonizing
- Usable under most extreme conditions
- No need for torque tension recalculation
- NSF Registered



APPLICATIONS

- Power plants
- Boiler rooms
- Steel mills
- Oil refineries
- Marine applications
- Chemical plants
- Automotive industry

General

- Bolts
- Screws
- Studs
- Pipe threads
- Press fits
- Pump sleeves
- Splines

CONTAINER SIZE	REORDER NUMBER
785	
Aerosol	081664
200 Gram Tube	086907
250 Gram Brush Top	082016
500 Gram Brush Top	080747
24 Kilogram	080748

CONTAINER SIZE	REORDER NUMBER
785FG	
200 Gram Tube	088506
500 Gram Brush Top	080788

725

NICKEL ANTI-SEIZE COMPOUND

772

A high performance, nickel based anti-seize. Combines the extreme pressure, corrosion resistant anti-seize abilities of colloidal nickel, in an oil suspension that can withstand temperatures up to 1425°C (2597°F).



PRODUCT CHARACTERISTICS

- Water resistant; ultra fine particles
- Eases mechanical assembly and disassembly up to 1425°C (2597°F)
- Balanced coefficient of friction eliminates torque recalculations
- Guards against galling and corrosion protects against self-welding
- Meets MIL-A-907F
- Withstands extreme pressure
- NSF Registered
- Applicable where copper use is prohibited



APPLICATIONS

- Automotive
- Chemical industries
- Foundries
- Utilities
- Refineries

Mechanical assembly of

- Bolts, studs, flanges, pressfits, valve stems, pump sleeves, screws, bushings, gaskets, bearings, etc.

Use on

- Steel
- Stainless steel
- Iron
- Aluminum
- Copper
- Brass
- Titanium

CAUTION

- Should not be used on oxygen systems



CONTAINER SIZE 725	REORDER NUMBER
Aerosol	082351
250 Gram Brush Top	081266
500 Gram Brush Top	082359
20 Liter	082349

CONTAINER SIZE 772 PREMIUM NICKLE ANTI-SEIZE	REORDER NUMBER
500 Gram Brush Top	082381

783

ACR

783 combines high performance industrial anti-seize performance with extreme corrosion protection and water washout resistance. 783 is ideal where the primary cause of bolt seizure is corrosion.

PRODUCT CHARACTERISTICS

- Provides excellent protection of metal components under extreme conditions
- Extreme corrosion protection and water washout resistance
- Eases disassembly up to 900°C (1652°F)
- Fills in microscopic voids
- No toxic heavy metals
- For extreme pressure up to 8928 kg/cm² (127,000 psi)
- Safer than traditional metallic based anti-seizes
- Usable under most extreme conditions



APPLICATIONS

- Marine
- Offshore oil platforms
- Chemical plants
- Waste water
- Mining industry
- Metal Fabrication
- Pulp and Paper

General

- Bolts
- Screws
- Studs
- Pipe threads
- Press fits
- Pump sleeves
- Splines

CONTAINER SIZE 783	REORDER NUMBER
250 Gram Brush Top	082805
500 Gram Brush Top	088653
500 Gram Open Top	088771
20 Liter Pail	088654

715

SPRAFLEX®/SPRAFLEX® GOLD

A surface lubricant for chain drives, open gears and wire rope. Bonds a long lasting, non-extruding "wear shield" to protect equipment operating under heavy loads.

PRODUCT CHARACTERISTICS

- Non-drip
- Self adhering, flexible lubricant
- Water resistant
- Resistant to acid fumes
- Guards against rust and corrosion
- Resists extrusion
- NSF Registered
- Replaces lubricant at every revolution

APPLICATIONS

- Chain drives
- Open gears
- Hoists
- Wire ropes and cables
- Textile equipment
- Paper making machinery
- Debarking drums
- Dams and lock gates
- Drag lines
- Rotary kilns/dryers
- Rotary feeders
- Conveyor chains

NOTE

Use Chesterton's 715 Spraflex Gold where a clean, non-staining film is needed



CONTAINER SIZE	REORDER NUMBER
715	
Aerosol	081702
20 Liter	081709
208 Liter	081707

CONTAINER SIZE	REORDER NUMBER
715-GOLD	
Aerosol	082015
1 Gallon/3.8 Liter	081896
20 Liter	081897
208 Liter	081898

787

SLIDING PASTE

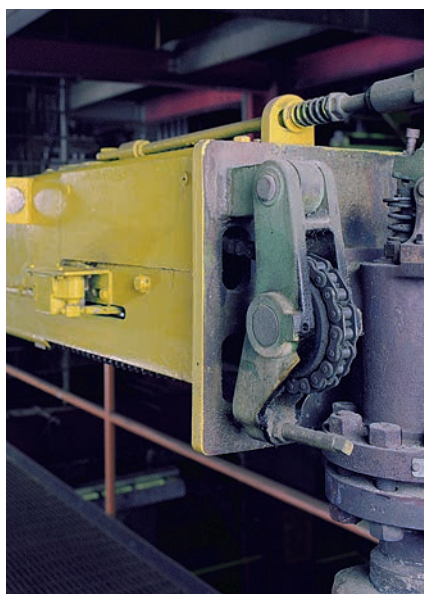
A semi-solid, pure synthetic base, high performance, extreme pressure lubricant. Leaves a solid lubricating film long after other lubricants have disappeared, without varnishing, up to 538°C (1000°F).

PRODUCT CHARACTERISTICS

- Pure, non-carbonizing synthetic base
- Lubricates at pressures to 10687 kg/cm² (152,000 psi)
- Excellent water washout resistance
- Non-fling, clinging lubricant
- Low coefficient of friction
- Low environmental impact
- Fortified with graphite and molybdenum disulfide
- NSF Registered

APPLICATIONS

- Smelting
- Forging
- Metal refining
- Chemical plants
- Petrochemical plants
- Foundries
- Other**
- Wire ropes
- Crane cables
- Railroad switch gear
- Open gears
- Rack and pinion tracks



CONTAINER SIZE	REORDER NUMBER
787	
500 Gram Brush Top	086803
1 Gallon/3.8 Liter	086805
20 Liter	086806

CLEANERS AND DEGEASERS



CLEANING PROPERTIES

WATER BASED – Alkali, pH 7 – 14

Petroleum oil and grease
Natural oils/Greases – animal, plant, fish
Dust/Dirt carbon black

Chesterton Products

218 HDP
235 SSC
360 Phosphate-Free Cleaner
801 Industrial
& Marine Solvent
803 Industrial
& Marine Solvent II
820 KPC

WATER BASED – Acid, pH 0 – 7

Inorganic deposits
Hardwater
Etch and clean concrete
Metal oxides – rust, aluminum oxide

Chesterton Products

338 Super Rust Remover
346 Descaler
& Chemical Cleaner

SOLVENT BASED – Petroleum

Petroleum oil and grease
Adhesives
Rubbers
Mold release
Paints/Coatings
Plastics

Chesterton Products

274 Industrial Degreaser
276 Electronic
Component Cleaner
277 Metal Surface Degreaser
292 Precision Degreasing Solvent
294 CSD

SOLVENT BASED – Halogenated

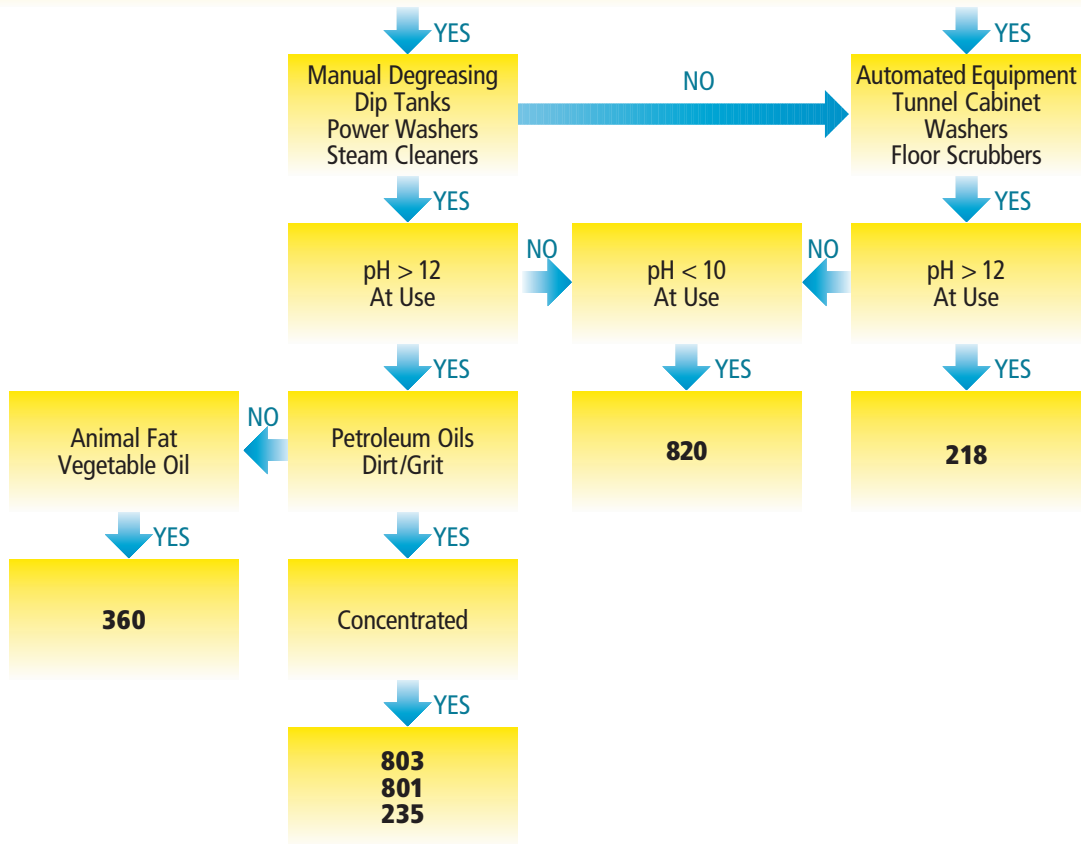
Energized electrical equipment
Electric motors
Electrical controls
Difficult organic soils

Chesterton Products

273 Electric Motor Cleaner
279 PCS
296 Electro Contact Cleaner

AQUEOUS CLEANERS/DEGREASERS

ALKALINE CLEANERS/DEGREASERS



218

HDP



Heavy duty, concentrated, virtually non-foaming, liquid alkaline degreaser. Designed with the environment in mind, yet it handles tough degreasing applications.

PRODUCT CHARACTERISTICS

- Excellent rinsability
- Corrosion inhibited
- No silicones
- Non-flammable
- No hazardous powder dust
- No toxic solvents
- No phosphates
- Can be used in food plants
- No EDTA
- NSF Registered
- Dye and fragrance free



APPLICATIONS

- Spray booth washers
- Floor scrubbers
- High pressure washers
- Steam cleaning equipment

NOTE

Chesterton's 218 HDP can be used up to 82°C (180°F)

CONTAINER SIZE	REORDER NUMBER
20 Liter	083001
208 Liter	083002

235

SSC

Powerful cleaner removes oily and greasy deposits, waxes, loose paint and heavy soils. Specially formulated for steam cleaning equipment.

PRODUCT CHARACTERISTICS

- Additives retard scale build-up and clogging of steam cleaning equipment
- Water based
- Concentrated
- Highly dilutable
- Biodegradable
- Non-flammable
- Contains strong alkalis, emulsifiers and surfactants
- No irritating fumes
- NSF Registered

APPLICATIONS

General

- Concrete
- Masonry
- Equipment (all types)

Pulp and Paper

- Papermaking machines

Textile

- Clothing machinery

CAUTION

- Should not be used on aluminum or metals sensitive to high alkalinity
- When using on painted surfaces, test small area for compatibility



CONTAINER SIZE	REORDER NUMBER
235	
20 Liter	080032
208 Liter	080033

360

PHOSPHATE-FREE CLEANER

Especially effective for the food industry on animal fats and vegetable oils; a versatile, industrial cleaner for environmentally sensitive areas.

PRODUCT CHARACTERISTICS

- Environmentally friendly
- Removes inorganic and light to medium organic soils
- Saponifies animal fat and vegetable oil
- High stable foam
- Biodegradable
- Non-flammable
- Solvent-free
- NSF Registered
- Approved by USCG
- Water soluble
- Highly concentrated
- Highly dilutable

APPLICATIONS

Food industry

- Federally inspected meat and poultry plants
- Food processing equipment
- Bottling machines
- Wax and grease removal from vents, stoves, hoods and drains

Waste water treatment

- Floors
- Pump stations
- Sludge removal
- Fungi removal

Marine

- Decks, Hulls, Bilges

Industrial

- Floors, walls, vinyl tiles
- Concrete
- Machines
- Machine shop tools
- Gutters

CAUTION

- Do not use on aluminum



CONTAINER SIZE	REORDER NUMBER
360	
20 Liter	083603
208 Liter	083607
1000 Liter	086562

801

INDUSTRIAL & MARINE SOLVENT

Industrial strength, multi-purpose water based degreaser.



PRODUCT CHARACTERISTICS

- Concentrated
- Wide dilution range
- Non-flammable
- Biodegradable
- Stable, clinging foam
- NSF Registered
- Approved by USCG
- Economical, efficient



APPLICATIONS

Machine shop/ Maintenance

Removes cutting oils from parts prior to inspection, assembly and shipping

Marine

Removes rot, mildew and fungi from hulls

Food industry

- Food processing equipment
- Ventilation hoods/fans
- Floors/drains

CAUTION

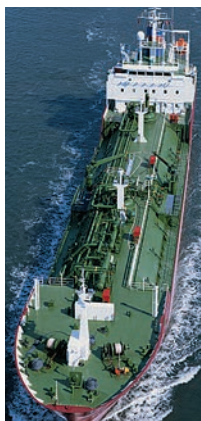
Do not use on metals sensitive to attack by alkaline materials

CONTAINER SIZE	REORDER NUMBER
801	
20 Liter	083202
208 Liter	083205

803

INDUSTRIAL & MARINE SOLVENT II

A powerful, non-solvent based degreaser. Its advanced surfactant technology offers maximum efficiency in soil removal, especially applications where solvent use is required.



PRODUCT CHARACTERISTICS

- Effective for industrial cleaning dust, dirt, carbon black petroleum based oils
- Phosphate-free
- Biodegradable
- Free of Butyl Cellosolve†
- No EDTA
- Free of toxic solvents
- Concentrated
- Highly dilutable
- Tough on viscous, heavy soils
- Non-flammable
- No irritating fumes
- Can be used hot or cold
- Compatible with pressure washers and steam cleaners
- NSF Registered

† Registered trademark of Union Carbide Corporation



APPLICATIONS

Pulp and paper industry

Cleaning production equipment

Chemical/ Oil processing

Production facilities

Food industry

- Concrete floors
- Masonry walls
- Engine blocks
- Railroad equipment
- Farm implements
- Construction equipment and other hard surfaces

CAUTION

Should not be used on aluminum or metals sensitive to high alkalinity
When using on painted surfaces, test small area for compatibility

CONTAINER SIZE	REORDER NUMBER
803	
1 Gallon/3.8 Liter	086774
20 Liter	090379
208 Liter	090388
1000 Liter Tote	086768

820

KPC

820N

Balances powerful performance with environmental compliance and worker safety, the ideal choice for process degreasing.

PRODUCT CHARACTERISTICS

- Moderate pH
- Low residue
- No harsh alkalis
- Phosphate-free
- Non-flammable
- Non-toxic
- Biodegradable
- Highly dilutable
- Safe on most metals
- NSF Registered
- No offensive odor
- Effective for dip tank cleaning when heated to 82°C (180°F)
- No Butyl Cellosolve[†] or 2-butoxyethanol
- No EDTA

[†] Registered trademark of Union Carbide Corporation



APPLICATIONS

Quickly and efficiently removes

- Oil deposits
- Soot and exhaust residue
- Metal working fluids
- Animal and vegetable fats
- Lubrication compounds
- Soils common to industrial production areas
- Optimum results when using ultrasonic machines, may be heated to 82°C (180°F) to enhance cleaning

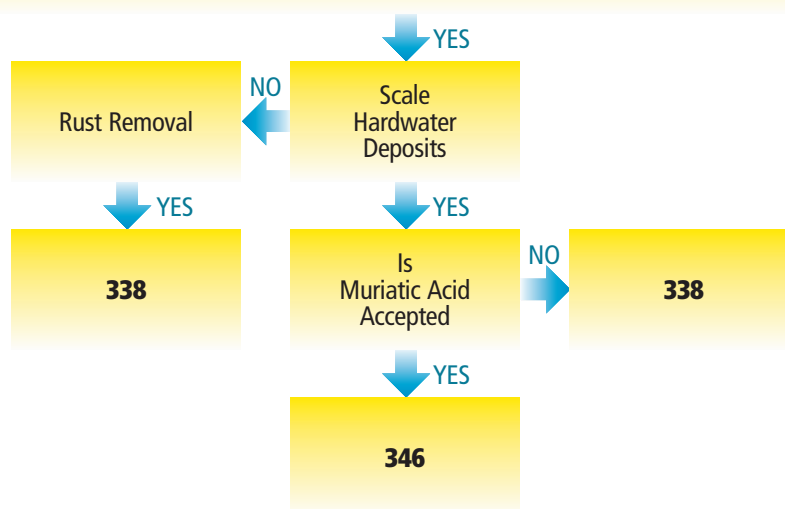
CONTAINER SIZE 820	REORDER NUMBER
20 Liter	082260
208 Liter	082264
1000 Liter Tote	083555

CONTAINER SIZE 820N**	REORDER NUMBER
20 Liter	088584
208 Liter	088585

**USA Formulation

ACID CLEANERS/DEGREASERS

ACID CLEANERS



SUPER RUST REMOVER

Removes rust from ferrous metals, corrosion from aluminum, brightens copper, brass, stainless steel, and zinc quickly and safely.

PRODUCT CHARACTERISTICS

Highly concentrated, acid based
 Can be used on all metals
 Removes metal oxide layer
 Brightens non-ferrous metals
 Leaves metal paint ready
 Inhibited to protect base metals
 Biodegradable
 Water based
 Non-flammable
 Rinses clean with water
 Short term corrosion protection coating



APPLICATIONS

General

Metal prefinishing of vehicle bodies
 Chassis
 Appliances
 Machined parts
 Machine tool frames
 Sheet metalwork

Maintenance

Restores rusted inventories
 Nuts/Bolts
 Threaded assemblies
 Internal corrosion
 Shafts
 Cast housings

CONTAINER SIZE	REORDER NUMBER
338	
20 Liter	085904
208 Liter	085907

DESCALER & CHEMICAL CLEANER

Strong, acid based multi-use liquid formulated with metal protecting inhibitor for a wide range of applications.



PRODUCT CHARACTERISTICS

Biodegradable
 Water based
 Non-flammable
 Dissolves rust and scale while protecting base surface
 Concentrated hydrochloric base
 Versatile
 Efficient
 Economical, saves on labor, maintenance costs and fuel consumption
 NSF Registered



APPLICATIONS

Removes hard water build-up, lime scale and corrosion from

Steam boiler tubes
 Condenser water systems
 Water circulating equipment

General

Etches concrete
 Cleans stained concrete
 Removes cement build-up from equipment

CAUTIONS

Not effective on grease, oil and common soil
 Not for use on aluminum, painted enamel, stainless steel or decorative metals

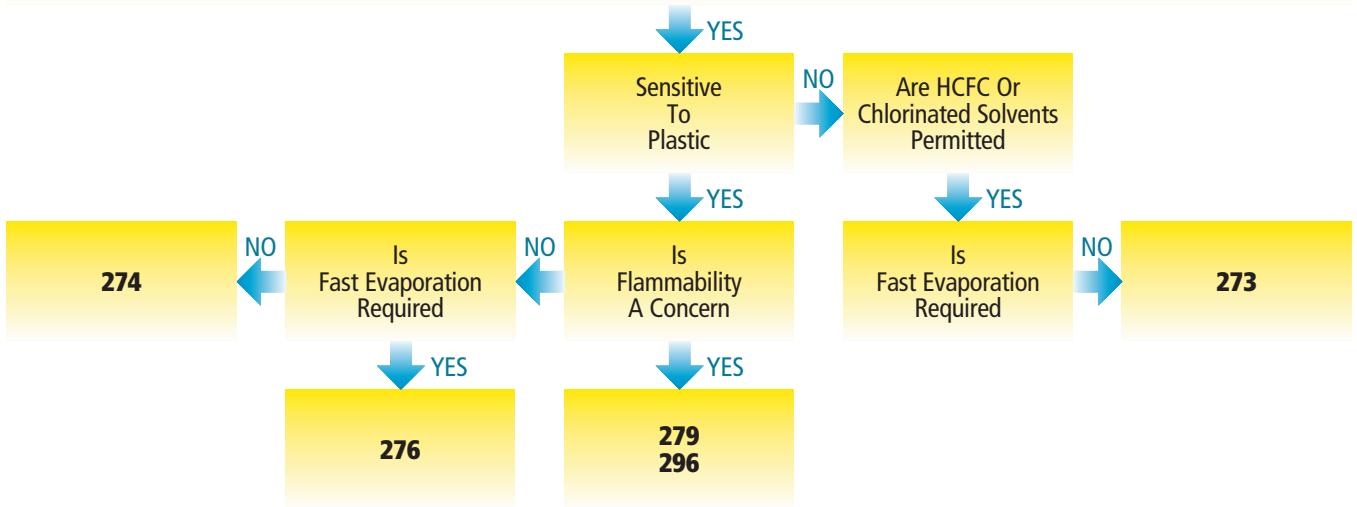
NOTE

For detailed application instructions please refer to the product data sheet

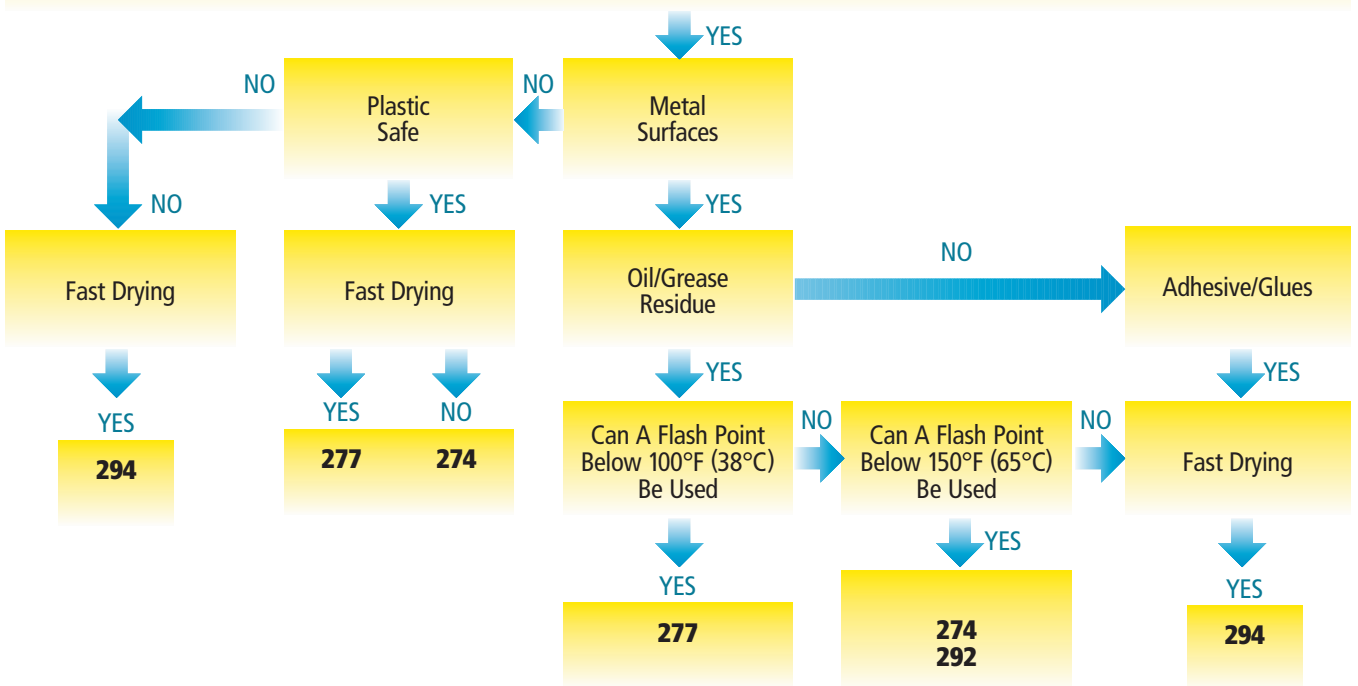
CONTAINER SIZE	REORDER NUMBER
346	
20 Liter	088403
208 Liter	088407

SOLVENT CLEANERS/DEGREASERS

ELECTRONIC CLEANING/DEGREASING



MECHANICAL CLEANING/DEGREASING



274

INDUSTRIAL DEGREASER

An industrial and marine environment, hard surface degreaser.



PRODUCT CHARACTERISTICS

Dissolves petroleum oil, grease, tar and other inorganic soils
 Does not corrode metals
 Low evaporation rate, results in reduced consumption and replacement
 Low odor
 Low aromatic content
 High flash point
 Does not attack most paints and plastics
 Safe for use on all metals
 Fast penetrating action
 NSF Registered



APPLICATIONS

Metal production shops
 Paint shops
 Boiler rooms
 Repair shops
 Ship yards
 Maintenance shops
 Dip tanks
 Hard surfaces
 Machined parts
 Recirculating and agitated parts washer
 Metal parts
 Equipment

CONTAINER SIZE	REORDER NUMBER
274	
Aerosol	081676
1 Gallon/3.8 Liter	081278
20 Liter	081006
208 Liter	081013

294

CSD

A fast acting, general purpose industrial degreaser engineered to reduce the time consumed on mechanical maintenance operations and costly downtime.



PRODUCT CHARACTERISTICS

Fast evaporation
 No residue
 Safe on all metals
 Safe on most plastics, rubbers and coatings – test prior to use
 Low aromatic content
 No HCFC, CFC, TCE, n-PBr
 Removes dust, dirt, oil and other industrial soils
 Dissolves resins, polymers, adhesives and petroleum residues
 Flash point (ASTM D 93, DIN 51 755) <-18°C (<0°F)



APPLICATIONS

Chains and cables
 Gear boxes
 Dies and molds
 Bearings
 Air tools
 Pneumatic tools
 Fork lifts
 Brakes and clutches
 Material handling equipment
 Parts and tools

CAUTION

294 CSD should not be used on energized electrical equipment or near ignition sources.

CONTAINER SIZE	REORDER NUMBER
294	
Aerosol	080783

276

ELECTRONIC COMPONENT CLEANER

Fast evaporating, high performance, solvent based degreaser containing no ozone depleting solvents.



PRODUCT CHARACTERISTICS

- Fast evaporation rate
- Low residue
- Non chlorinated
- Safe for use on all metals
- No ozone depleting materials
- NSF Registered



APPLICATIONS

Spray cleaning

- Switches
- Controllers
- Panel meters
- Circuit boards
- Contacts
- Levers
- Control panels

Hard surface degreasing

- Equipment
- Motors
- Non-energized electrical equipment
- Parts in process

CONTAINER SIZE	REORDER NUMBER
276	
Aerosol	081622
20 Liter	081623
208 Liter	081624

277

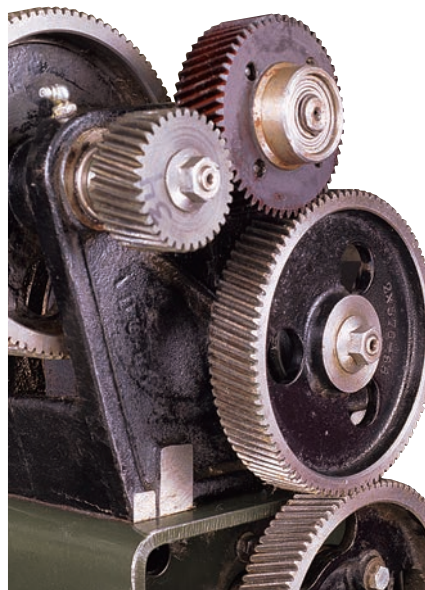
METAL SURFACE DEGREASER

A fast acting, low residue, non-chlorinated industrial strength degreaser designed to penetrate oils, greases and other soils.



PRODUCT CHARACTERISTICS

- Fast evaporating degreaser
- Safe for use on all metals
- Low aromatic content
- Strong flushing action
- Removes dust, dirt, oil and other industrial soils
- Low residue
- No ozone depleting chemicals or suspected carcinogens
- NSF Registered



APPLICATIONS

General

- Roller bearings
- Slides
- Hinges
- Valves and fittings
- Motors
- Chain drives/Sprockets
- Moving mechanisms
- Delicate precision instruments
- Parts in process
- Equipment

CONTAINER SIZE	REORDER NUMBER
277	
Aerosol	083236
20 Liter	083432
208 Liter	083433

273

ELECTRIC MOTOR CLEANER

Removes grease, sludge, dirt from motors and electrical equipment while operating up to 240 volts. One of the few such products classified by Underwriters Laboratories as non-flammable.†



PRODUCT CHARACTERISTICS

- Non-flammable
- Effectively degreases electric motors while operating up to 240 volts
- High dielectric strength
- Non-conductive
- Non-corrosive
- NSF Registered
- Removes heavy and light oil and grease and organic residues
- Evaporates quickly, no residue

† Classified by Underwriters Laboratories, Inc., as to fire hazard only. Spray does not propagate flame. Deposited liquid residue is classified as non-flammable



APPLICATIONS

- Electronic equipment
- Electric motors
- Fuse holders
- Blowers
- Fans
- Hoists
- Switches
- Transformers
- Cables
- Control panels
- Motor windings
- Circuit boards
- Electrical test equipment
- Motorized instruments

NOTE

On plastic, paint or rubber, test small area prior to use
Re-lubricate as necessary

CONTAINER SIZE	REORDER NUMBER
273	
Aerosol	080502
20 Liter	080514
208 Liter	080517

279

PCS

A clear, low-odor non-ozone depleting precision cleaning solvent. State-of-the-art HFE technology removes light oils, particulates, Krytox† grease, fluoropolymers and other contaminants from electrical and electronic contact and assemblies.



PRODUCT CHARACTERISTICS

- Non-flammable
- Fast evaporating
- Low residue
- Non-corrosive
- High purity
- High dielectric strength
- No ozone depleting potential
- No VOC's
- Replaces CFC-113
- Safe on plastic
- NSF Registered

† Krytox is a registered trademark of E.I. du Pont de Nemours



APPLICATIONS

- Electronics**
- Electrical/Electronic equipment
- Motorized instruments
- Medical industry**
- Medical devices
- Oxygen lines and valves
- General**
- Gyroscopes
- Delicate instrumentation
- 279 Materials Compatibility**
- All metals
- Plastics
- Elastomers

NOTE

For the complete materials compatibility chart and product information, please consult 279's product data sheet or contact your local representative

CONTAINER SIZE	REORDER NUMBER
279	
Aerosol	083434

292

PRECISION DEGREASING SOLVENT

Fast evaporating, low odor, industrial strength solvent blend cleans equipment instantly before disassembly, maintenance and repair.



PRODUCT CHARACTERISTICS

- Flash point 41°C (105°F)
- Low citrus odor
- Low aromatic content
- Safe for all metals and most plastics
- Fast evaporation rate
- Removes oil, grease, wax, tar and other organic soils
- Replaces kerosene, mineral spirits, chlorinated solvents and naphtha based degreasers
- High Kb value
- Contains no ozone depleting substances
- Low residue
- NSF Registered



APPLICATIONS

- Bearings
- Pulleys
- Valves and fittings
- Chains
- Cables
- Molds
- Lathes
- Presses
- Production tools
- Finished parts
- Non-energized electrical, equipment, motors, switches and controllers

NOTE

- May attack some rubber and plastics.
- Test prior to use

CONTAINER SIZE	REORDER NUMBER
292	
Aerosol	080529
20 Liter	080563
208 Liter	080564

296

ELECTRO CONTACT CLEANER*

New generation precision cleaning solvent designed to replace CFC-113, HCFC-141b and other ozone depleting materials.

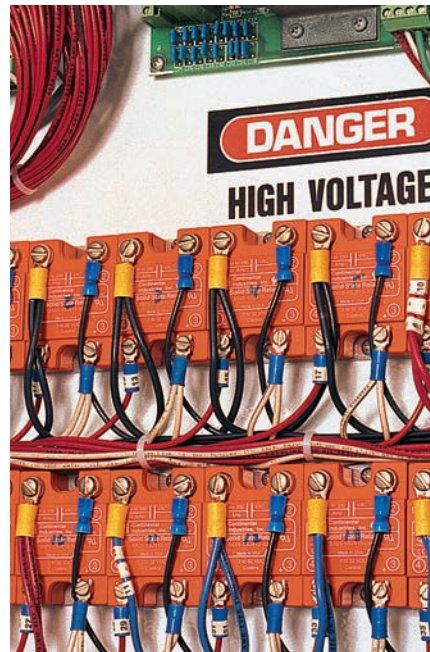


PRODUCT CHARACTERISTICS

- Non-flammable
- No VOC's
- No ozone depleting potential
- Fast evaporating
- Safe on plastics
- Low residue, high purity
- Non-corrosive
- High dielectric strength
- Restores and improves electrical continuity on energized equipment
- Removes fluorinated lubricants
- NSF Registered



*Not available in EME



APPLICATIONS

- Switches
- Controllers
- Panel meters
- Circuit boards
- Contacts
- Levers
- Motorized instruments
- Medical devices
- Control panels
- Hard surface degreasing of**
- Equipment
- Motors
- Parts in process

CONTAINER SIZE	REORDER NUMBER
296	
Aerosol (not available in bulk)	080631

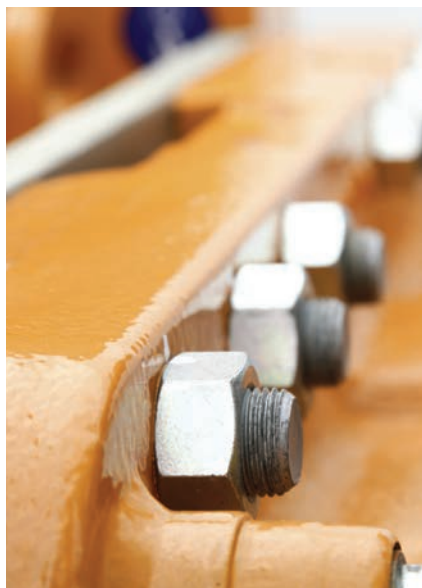


MAINTENANCE SPECIALTIES

High quality, fast acting, penetrating oil reaches inaccessible areas and frees frozen nuts, bolts, and fittings without damaging the base metal.

PRODUCT CHARACTERISTICS

Singular function
Safe on plastic and painted surfaces
Extremely low surface tension
NSF Registered
Contains no glycols, alcohols, DMSO (dimethylsulfoxide) or chlorinated solvents
Pleasant odor
No compromise – best possible penetration
Creeps into microscopic spaces
Chesterton Sprasolvo® is the same fast acting, penetrating oil in aerosol form



CONTAINER SIZE	REORDER NUMBER
706	
1 Liter	081310
20 Liter	081312
208 Liter	081307

APPLICATIONS

Use on all corroded or seized threaded assemblies

Plumbing
Machinery
Trucks
Pipelines
Railroads
Tractors
Steam and gas fittings
Valves and Pumps
Drilling utilities
Auto shops
Ships

NOTE

Use Chesterton's 601 Chain Drive Pin & Bushing Lubricant when light lubrication is required and 775 Moisture Shield as a moisture displacing corrosion inhibiting coating

Fast acting, penetrating oil in a convenient. Excellent for hard to reach areas where rust, tar, grease and dirt may prevent easy removal of nuts, bolts and fittings.

PRODUCT CHARACTERISTICS

Singular function, pin point spray
Safe on plastic and painted surfaces
Extremely low surface tension
NSF Registered
723FG – Conforms to FDA standard 21CFR 172.884, 178.3620, 178.3650
Contains no acids or chlorinated solvents
Pleasant odor
No compromise – best possible penetration
Creeps into microscopic spaces



CONTAINER SIZE	REORDER NUMBER
723	
Aerosol	081308

CONTAINER SIZE	REORDER NUMBER
723FG	
Aerosol	083770

APPLICATIONS

Ships
Drilling utilities
Auto shops
Railroads
Pipelines
Tractors
Steam and gas fittings
Trucks
Machinery
Valves
Pumps

NOTE

FG designates a Food Grade Product
Use Chesterton's 601 Chain Drive Pin & Bushing Lubricant when light lubrication is required and 775 Moisture Shield as a moisture displacing corrosion inhibiting coating

730**SPRAGRIP®**

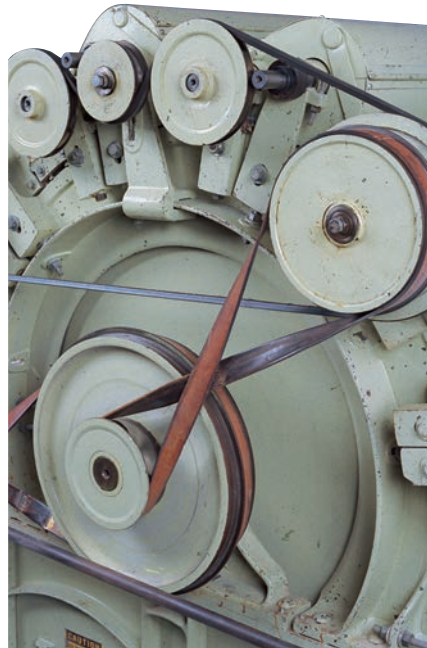
Superior energy efficient belt dressing in a convenient aerosol package. Lengthens life of leather, rubber, canvas or plastic belts; ends belt slippage for all V, flat and round belts.

PRODUCT CHARACTERISTICS

- Eliminates slippage
- No glazing or hardening
- Pin point spray
- Contains no rosin, asphalt, oil or aggressive solvents
- Saves energy, restores mechanical efficiency
- Non-staining
- NSF Registered
- Collects less dirt, no build-up
- Preserves belts in inventory
- Waterproofs and prevents slipping even under the most humid conditions

APPLICATIONS

- Belt drives
- Automotive equipment
- Industrial equipment
- Fans
- Package conveyors
- Conveyor belts
- Generators
- Pumps
- Compressors
- Indoor or outdoor applications
- Controls belt slippage due to moisture, dust, heat and cold
- Prevents degradation from U.V. rays, chemical fumes and water

**CONTAINER SIZE**

730

Aerosol

REORDER NUMBER

080308

800**GOLDEND® TAPE**

Heavy duty, high density, tear resistant, moldable, dry PTFE sealant tape for use on metal or plastic threads, pipes or bolts.

PRODUCT CHARACTERISTICS

- Temperatures from -240°C (-400°F) to 260°C (500°F)
- Seals tightly and opens easily
- UL listed
- Meets MIL-T-27730A
- NSF Registered
- DVGW approval No. 96.01e907
- Acceptable for oxygen use
- Non-aging, non-hardening
- Chemically resistant
- Requires fewer wraps
- Resists tearing and breakage
- Won't clog fuel lines
- Adjust fittings without leakage

APPLICATIONS**Dry thread sealant for Liquids**

- Steam, water, salt water
- air, fuels, refrigerants, acids, alkalies, all solvents

Gases

- Hydrogen, ammonia, oxygen, propane, butane, nitrogen

Other

- Seals all plumbing and most industrial piping threads
- Pneumatic and hydraulic fittings up to 690 bar (10,000 psi)

CAUTION

- For nitric or mixed acid services, consult factory

**CONTAINER SIZE**

800 - Metric

6,4 mm x 13,72 M

12,7 mm x 4,57 M

12,7 mm x 13,72 M

12,7 mm x 32,92 M

19,1 mm x 13,72 M

25,4 mm x 13,72 M

REORDER NUMBER

000805

000801

000802

000803

000804

000806

CONTAINER SIZE

800 - Inch

1/4" x 540"

1/2" x 180"

1/2" x 540"

1/2" x 1296"

3/4" x 540"

1" x 540"

REORDER NUMBER

000805

000801

000802

000803

000804

000806

860

MOLDABLE POLYMER GASKETING

Two-part, extrudable gasketing material allows for the creation of ultra-thin gaskets in any size, any shape. Never sticks.



PRODUCT CHARACTERISTICS

Economical; material costs less than compressed sheet gasketing
 Won't harden in tip
 Can withstand temperatures up to 260°C (500°F)
 Excellent resistance to oils, water, chemicals and solvents
 Steam to 6.8 kg/cm² (100 psi) and 170°C (338°F)
 Never sticks to surfaces; disassembles cleanly
 Fills voids and scratches, up to 6 mm (1/4 inch) deep
 Remains elastic, won't shred and dog lines
 NSF Registered
 Conforms to FDA standard 21CFR 175.300 and 177.2600



APPLICATIONS

For sealing complex mechanical assemblies

Gear boxes
 Inspection covers
 Transmissions
 Bearing housings
 Speed differentials

Sealing surfaces

Fittings, including thread fittings, hose clamps and o-ring fittings, and compression fittings
 Oil sumps and reservoirs
 Turbine casings
 Electrical boxes
 Vacuum systems

CAUTION

Not for use in contact with concentrated acids or hot concentrated caustics

KITS	REORDER NUMBER
860	
Kit	086310
Toolbox kit	084883

900

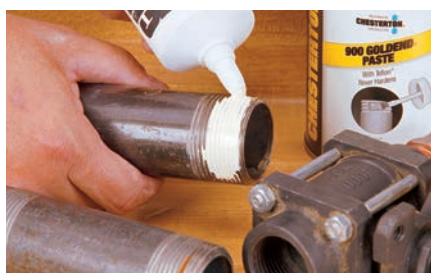
GOLDEND[®] PASTE

Non-hardening, non-corrosive, moldable PTFE thread sealant and lubricant for the most difficult of sealing demands on pipe joints, pneumatic fittings, and hydraulic line applications.



PRODUCT CHARACTERISTICS

Lubricates threads during assembly, seals tightly, opens easily
 For use at temperatures up to 260°C (500°F)
 Non-hardening
 Non-corrosive
 Non-toxic
 No volatile solvents
 NSF Registered
 UL listed



APPLICATIONS

Thread sealant and lubricant for Liquids

Water, salt water, fuels, refrigerants, acids, alkalis, solvents

Gases

Steam, air, propane, butane, nitrogen and ammonia**

Other

Pneumatic and hydraulic fittings
 Anti-seize sealing to 260°C (500°F)
 Holds gasket in place during assembly

NOTE

Not for use on liquid or gaseous oxygen

** For nitric and mixed acid service, consult factory

CONTAINER SIZE	REORDER NUMBER
900	
200 Gram Tube	000908
250 Gram Brush Top	086852
500 Gram Brush Top	000909
20 Liter	000936

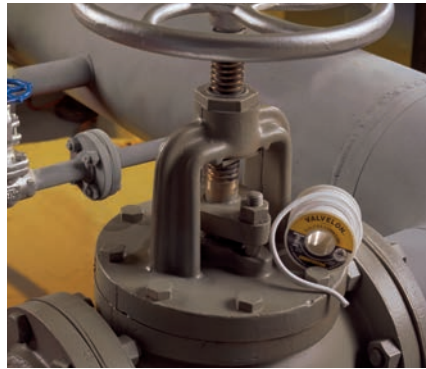
3500

VALVELON®

Unique multi-layered, 100% PTFE anti-extrusion construction sealant conforms to surface shapes. Ideal for valve packing and flange gaskets, withstands a wide range of temperatures and seals virtually all chemicals.

PRODUCT CHARACTERISTICS

- Packs valves/Seals flanges
- Dense, wrapped construction conforms to fill voids, making a tight seal without cold flow extrusion
- Non-hardening
- Non-toxic
- Unlimited shelf life
- Reduces stem valve packing and gasket inventories
- Chemically inert
- Wide temperature range
-240°C (-400°F) to 260°C (500°F)
- High tensile strength
- NSF Registered



APPLICATIONS

Generally all substances within a pH range of 0 to 14
 Steam, salt water, air, refrigerants, sulfuric acid, hydrochloric acid, nitric acid, chromic acid
 Sodium hydroxide, potassium hydroxide, kerosene, gasoline, perchloroethylene, hydrogen, ammonia, fluorinated solvents
 Chlorine, propane, butane, nitrogen

CAUTION

Do not use on liquid or gaseous oxygen, molten alkali metals and some rare halogenated compounds

CONTAINER SIZE 3500-Metric	REORDER NUMBER
2,4 mm x 15,3 M	003566
4,0 mm x 10,7 M	003570
5,6 mm x 4,6 M	003574
7,1 mm x 2,7 M	003578

CONTAINER SIZE 3500-Inch	REORDER NUMBER
3/32" x 50'	003566
5/32" x 35'	003570
7/32" x 15'	003574
9/32" x 9'	003578

989

RELEASE COMPOUND

A concentrated silicone release agent, formulated for use in mold applications operating at temperatures from 60°C (140°F) to 260°C (500°F) without sticking, spotting, or marking.

PRODUCT CHARACTERISTICS

- Non-flammable
- Concentrated
- Contains no organic solvents
- No HCFC's, CFC's, or halogenated compounds
- Maximum release without mold build up
- Will not oxidize or carbonize
- Enhanced worker safety
- Fewer costly rejects
- Environmentally safe
- Finer detail, high gloss finish
- Easy to apply



APPLICATIONS

Ideal for the following molding operations

- Sand core operations
- Investment casting
- Injection molding
- Thermosets
- Thermoplastics

Suitable for

- Acrylic
- Cellulosic(s)
- Polystyrene
- Polyester
- Polyurethane
- Rubber



CONTAINER SIZE 989	REORDER NUMBER
20 Liter	081693

995

RELEASE AGENT



Concentrated formulation for use in all mold applications. Up to 20% more releases per application, increases production rates, and reduces costly rejects.

PRODUCT CHARACTERISTICS

Unique, complex silicone polymer
Contains no CFC's, chlorinated solvents,
or halogenated compounds
Multiple releases per application
No mold build up, leaves mold cleaner
Easy to apply
High gloss, wet look finish
Fewer rejects
Finer detail
Faster cycling



APPLICATIONS

Ideal for the following molding operations

Sand core operations
Investment casting
Injection molding
Thermosets
Thermoplastics

Suitable for

Acrylic
Cellulosic(s)
Polystyrene
Polyester
Polyurethane
Rubber

CONTAINER SIZE	REORDER NUMBER
995	
Aerosol	081675
20 Liter	081779
208 Liter	081860

METALWORKING FLUIDS



380

MACHINERY COOLANT

Full synthetic, biodegradable, water soluble coolant that is formulated to be resistant to microbial attack. Excellent lubricity and heat dissipating properties extend tool life.

PRODUCT CHARACTERISTICS

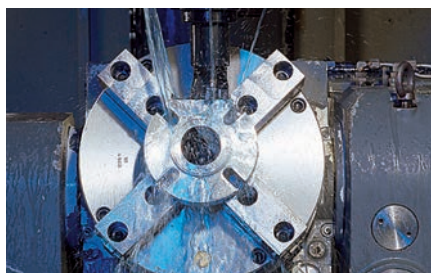
High detergency
Stable in hard water
Easily removed with water,
no solvents necessary
Contains no petroleum or mineral oil
Anti-corrosive
Superior heat dissipation
Concentrated, water dilutable
Low drag out
Excellent filterability
For all metals except magnesium

APPLICATIONS

Broaching
Drilling
Grinding
Machining
Milling
Reaming
Sawing
Tapping
Turning

NOTE

For recommended dilutions, maintenance, clean-up, storage and waste disposal please consult the product data sheet. It is recommended that the reservoir be cleaned with Chesterton's 814 Sump Cleaner and Conditioner.



CONTAINER SIZE	REORDER NUMBER
380	
20 Liter	080091
208 Liter	080175

388

SYNTHETIC TAPPING FLUID

Safe, pure synthetic formula for machining operations performed at high speed and feed rates, as well as manual or automatic single-shot cutting tool applications.

PRODUCT CHARACTERISTICS

Ready to use
Fluid, penetrates tight tolerances
Metal fines do not stick
Can be used with aluminum,
and aluminum alloys
Does not smoke, fume or mist
Essentially odorless
Biodegradable, contains no oil or solvents
Excellent lubricity
Superior heat dissipation
Extends tool life
Corrosion inhibited
Contains no chlorine, sulfur,
chlorinated hydrocarbons, petroleum oil,
PCB's, nitrites, phenols, or mercurials

APPLICATIONS

Tapping
Boring
Reaming
Threading
Drilling
Milling
May be used in
mist applications

NOTE

Please consult the product data sheet for the suggested use metals listing, clean-up, storage and waste disposal information.



CONTAINER SIZE	REORDER NUMBER
388	
475 Milliliter	081491
20 Liter	081492
208 Liter	081194

389

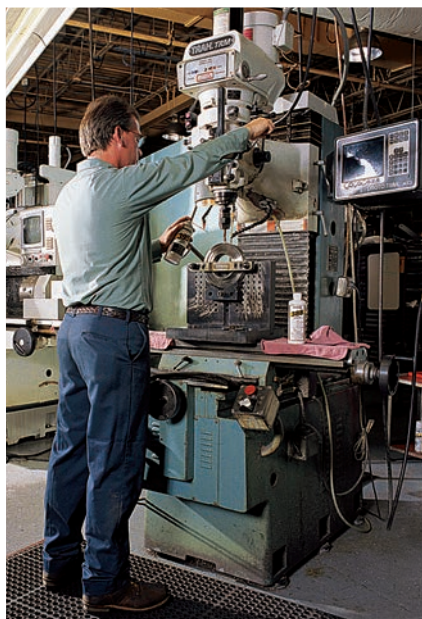
SYNTHETIC TAPPING COMPOUND



Provides the industrial performance of conventional petroleum and solvent based fluids with the superior lubrication of a synthetic, heat-dissipating formulation.

PRODUCT CHARACTERISTICS

Ready to use
Clinging, does not throw off
Appearance and feel of petroleum oil
Excellent lubricity
Reduces galling
Extends tool life
Corrosion inhibited
No chlorine,
chlorinated hydrocarbons, or sulfur
Does not smoke, fume, or mist
Essentially odorless
Biodegradable



APPLICATIONS

Tapping
Boring
Reaming
Threading
Drilling
Milling

NOTE

Please consult the product data sheet for the suggested use metals listing, clean-up, storage and waste disposal information

CONTAINER SIZE	REORDER NUMBER
389	
475 Milliliter	083431
20 Liter	083429

390

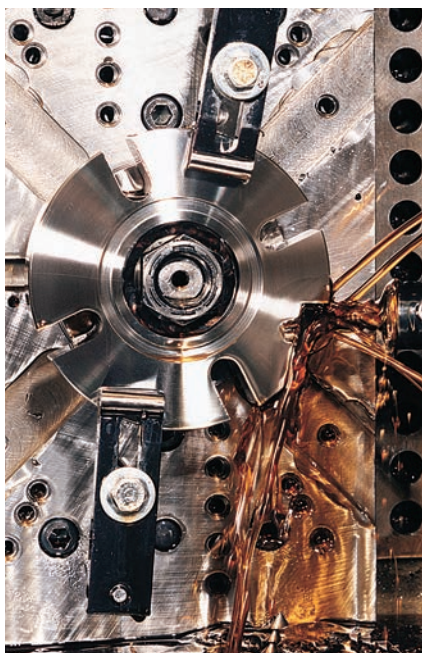
CUTTING OIL



High viscosity, oil-based lubricant reinforced for heavy duty machining applications.

PRODUCT CHARACTERISTICS

Use on hard or soft ferrous metals
Powerful extreme pressure additives
Provides maximum tool life
Excellent part finish
Clings to vertical and overhead surfaces
Cleaner cuts, prevents metal to metal
microwelding, galling and built-up edges
Protects from rust
No unpleasant odors
NSF Registered



APPLICATIONS

A lubricant for all types of metal cutting and forming

Broaching
Boring
Drilling
Sawing
Reaming
Milling
Tapping
Countersinking

NOTE

Tools and parts are easily cleaned with water-based degreasers such as Chesterton's 801 Industrial & Marine Solvent or solvent based products such as 274 Industrial Degreaser, please consult product data sheet for additional information

CONTAINER SIZE	REORDER NUMBER
390	
Aerosol	080102

395

TAPPING LUBRICANT



Non-corrosive, non-staining compound, which can be used on all metals including aluminum and aluminum alloys.

PRODUCT CHARACTERISTICS

- High viscosity clings to tools
- Contains no chlorinated hydrocarbons
- Will not corrode aluminum or other soft metals
- Excellent lubricity for softer metals
- Improves cutting accuracy
- Clear, colorless, non-staining
- Pleasant mild odor
- Improves machinability, frees chip movement and reduces drag
- Stops galling; promotes a uniform cut
- Prolongs life of cutting tools
- Increases production rate
- NSF Registered



APPLICATIONS

- Tapping
- Threading
- Reaming
- Boring
- Milling
- Broaching
- Air mist applicators
- Acceptable for a variety of metals including aluminium alloys
- Excellent for aluminum mold fabrication and prototype machining

CONTAINER SIZE	REORDER NUMBER
395	
Aerosol	085201
20 Liter	085211

CORROSION CONTROL



421

CLEAR PROTECTIVE COATING (CPC)

General duty acrylic coating provides a clear, impermeable, flexible film to protect against air, water, oils, chemicals, and corrosion up to 80°C (176°F).

PRODUCT CHARACTERISTICS

Transparent
Non-yellowing
High dielectric strength
Oil resistant
Water resistant
Non-staining
Quick-drying
High gloss
Resistant to fungus
Protects copper, aluminum, and brass from forming dull oxide layer



APPLICATIONS

Metal machinery
Tools
Forms
Paper signs
Documents
Drawings
Connectors
Electrical assemblies
Electronic circuit boards
Motor windings

CONTAINER SIZE
421

Aerosol

REORDER NUMBER

084901

438

PTFE COATING

The best combination of a clean, dry, PTFE-based powder lubricant with a tough, long-term, protective coating that resists water and chemicals.

PRODUCT CHARACTERISTICS

Specially designed for smooth non-porous surfaces
Non-staining
Dries instantly
Non-oily, non-greasy
Excellent chemical resistance
Strong resistance to wash out
Will not absorb or hold moisture
Guards against sticking and material build-up
Reduces lubricant costs
Saves production time
Reduces power consumption
NSF Registered



APPLICATIONS

Metals
Plastics
Wood
Leather
Rubber
Glass
Painted surfaces
Fiberglass
Elastomers
Instruments
Machine tools
Plastic bearings
Cold molds
Dies
Inside bins, tanks, hoppers
Paper converting equipment
Woodworking shops

CAUTION

On plastic or paint, test small area before using

CONTAINER SIZE
438

Aerosol

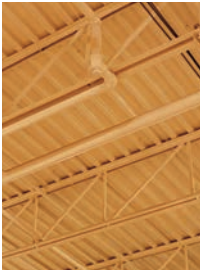
REORDER NUMBER

082808

740

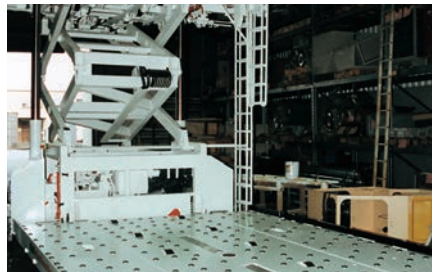
HEAVY DUTY RUST GUARD

Long-term, corrosion preventative coating provides heavy-duty metal protection for all areas constantly exposed to humidity and corrosive fumes, without critical surface preparation.



PRODUCT CHARACTERISTICS

Easy to apply – easy to remove
Self-healing if scratched
Does not peel or flake
Provides up to two years corrosion protection under sheltered outdoor conditions
Conforms to MIL-C-161173D, Grade 1 and 4 (transparent only)
Excellent resistance to acid, alkali and salt air fumes
Available in transparent brown and opaque industrial grey
Product can be easily removed with Chesterton's 276 Electronic Component Cleaner or 274 Industrial Degreaser



APPLICATIONS

Metal tools
Parts in process
Machinery, tubing, castings, rods, jigs and fixtures
Stampings
Parts in storage
Pumps
Fittings
Valves
Hinges
Tanks
Indoor structural steel

CONTAINER SIZE 740 - TRANSPARENT BROWN	REORDER NUMBER
Aerosol	087702
1 Gallon/3.8 Liter	087705
20 Liter	087704
208 Liter	087707

752

COLD GALVANIZING COMPOUND

One part system zinc rich primer or protective topcoat for iron, steel, and welds exposed to atmospheric or corrosive conditions.

PRODUCT CHARACTERISTICS

Flexible, non-chipping, instantly galvanizing
95% pure zinc in dried film
Ultra fine particle size
Fast drying, no heat required
3-way corrosion protection
Conforms to MIL-P-46105, MIL-P-21035 and MIL-P-26915



APPLICATIONS

Steel and iron surfaces/structures
Air conditioning units
Agricultural machinery
Automotive bodies
Fences
Marine equipment
Metal roofs
Mining equipment
Structural steel tanks
Transmission towers
Underground pipelines
Welds
Ducts
Decks

CONTAINER SIZE 752	REORDER NUMBER
Aerosol	082601
2,7 Kilogram	082603

763

RUST TRANSFORMER®



*A mild, natural, acid based product, electrochemically transforms rust into a corrosion-inhibiting surface.
An excellent surface preparation alternative to sand blasting.*

PRODUCT CHARACTERISTICS

Works only when in contact with rust;
forms protective film
Easy to apply
No sandblasting
Cleans up with water
No strong acids
No elaborate application equipment
Biodegradable



APPLICATIONS

Storage tanks
Auto or truck bodies
Heavy equipment
Bridges
Transmission line towers
Ships
Piers
Structural steel
Marine
Construction sites

NOTE

Provides a good surface
for application of
Chesterton's
740 Heavy Duty
Rust Guard

CONTAINER SIZE	REORDER NUMBER
763	
1 Gallon/3.8 Liter	089417
20 Liter	089418
208 Liter	089419

775

MOISTURE SHIELD



Efficient, clear, moisture displacing and anti-corrosion protective film protects metal parts and equipment for months.

PRODUCT CHARACTERISTICS

Transparent film
Excellent corrosion protection
Penetrates fine tolerances
High dielectric strength
Protects new metal from corrosion
Easily removable with Chesterton's
water based or solvent based cleaners
Conforms to MIL-C-16173D
corrosion preventative, Grade 3



APPLICATIONS

Parts in process
Parts in transit
Parts in storage
Electrical systems
Marine industry
Dries out wet
electrical parts

NOTE

Where long term
protection is desired
use Chesterton's
740 Heavy Duty
Rust Guard

CONTAINER SIZE	REORDER NUMBER
775	
Aerosol	082102
20 Liter	082110
208 Liter	082107

ACCESSORIES



ACCESSORIES



NOVOSPRAYER II

The Chesterton Novosprayer II is a 475 milliliter (16 oz.), heavy duty, refillable, aluminum container designed to offer the convenience of an aerosol.

The Novosprayer II is easily pressurized with compressed air found in most industrial facilities. For filling ease, Chesterton also offers a filling/measuring device to eliminate the guess work when filling units from bulk containers. Please consult the product data sheet for product compatibility and additional information.

NOVOSPRAYER II	REORDER NUMBER
Container	083086
Filler/Measurer	709442
Repair Kits	709443



ECONO-SPRAYER

A heavy duty refillable spray applicator for lubricants, solvents, cleaning compounds, coatings. The 0,95 liter (1 quart) sprayer is fully portable and uses your compressed air to pressurize the container. All-metal construction means the Econo-sprayer is built to last. The Econo-sprayer comes with both jet stream and mist spray nozzles.

ECONO-SPRAYER	REORDER NUMBER
Chrome	080016



470 HAND HELD PROPORTIONER FOAM SPRAYER

Dilutes liquid chemical concentrates while spraying, creating a thick clinging foam. The unit, constructed of chemically resistant materials, is designed for general spray cleaning with water based cleaners; works strictly on water power. Eleven color coded pre-sized metering tips are provided for dilution ratios from 21:1 to 256:1. The unit has a quick disconnect water hose fitting and trigger operated pistol grip control handle. A minimum water pressure of 1,4 kg/cm² (20 psi) is required to operate equipment. Constructed of chemically resistant materials for durability and long life.

470 HAND HELD PROPORTIONER	REORDER NUMBER
470	080048

ACCESSORIES



208 DRUM MOUNTED LIQUID PROPORTIONER

Automatically dilutes liquid chemical concentrates with water to a pre-set concentration. Unit mounts directly on 110 or 208 liter (30 or 55 gallon) drums and discharges the diluted product directly into any container.

Flow rate is 9,5 liters (2.5 gallons) per minute at 3,0 kg/cm² (40 psi).

Maximum dilution range at 3,0 kg/cm² (40 psi) is 110 : 1, minimum is 1 : 1.

No electricity needed to operate.

A minimum water pressure of 1,4 kg/cm² (20 psi) is needed to operate the equipment.

Economically and safely produces product at the desired dilution, eliminating the possibility of using too much chemical concentrate.

208 DRUM MOUNTED LIQUID PROPORTIONER

REORDER NUMBER

208

084923

216 DRUM MOUNTED LIQUID PROPORTIONER

Has the same great features as the 208 drum with the option of either drum or wall mounting.

Flow rates are increased to 37,1 liters (9.8 gallons) per minute at 3,0 kg/cm² (40 psi).

Maximum dilution range at 3,0 kg/cm² (40 psi) is 1024 : 1, minimum is 5 : 1.

216 DRUM MOUNTED LIQUID PROPORTIONER

REORDER NUMBER

216

080049



340 SPRAY WAND WITH LIQUID PROPORTIONER

Dilutes concentrated liquids while in use.

Eight color coded pre-sized metering tips are provided for dilution ratios from 6 : 1 to 75 : 1. No electricity is required to operate. Water provides the energy to make the unit perform. Spray wand allows operator to reach inaccessible areas, to spray around corners and under and behind equipment, and to spray areas beyond their normal reach. The three way valve allows operator to control unit at the wand by choosing to spray, rinse,

or shut the unit off. Units are constructed of plastic and chemical resistant metal for long life. A minimum of 1,4 kg/cm² (20 psi) water pressure is needed to operate equipment.

340 SPRAY WAND WITH LIQUID PROPORTIONER

REORDER NUMBER

340

080046



DRUM FAUCETS 1,9 cm (3/4") and 5,1 cm (2")

Fits all standard 1,9 cm (3/4") and 5,1 cm (2") openings. Non-corroding polyethelene construction can handle thin or viscous fluids. Instant on/off control.

No gaskets or inside threads to leak. No wrench necessary to install.

DRUM FAUCET

REORDER NUMBER

1,9 cm (3/4")

080019

5,1 cm (2")

080023

ACCESSORIES



DRUM PUMP

Dispenses liquids from Chesterton 110 and 208 liter (30 to 55 gallon) drums. Easily installed in the standard 5,1 cm (2") drum opening. Self-venting. The spigot orientation of 360° permits versatility in dispensing. Effortless operation by unique lever-action stroke. Delivers approximately 0,48 liters (10 ounces) per stroke, with the capability of 22,7 liters (6 gallons) per minute. Will handle the more viscous materials (equivalent of SAE #250 oil). Made of high quality non-corroding polypropylene.

NOTE: For dispensing of solvents use the metal drum pump.

DRUM PUMP	REORDER NUMBER
Polypropylene	080018
Stainless steel	709278



LUBRI-CUP™

An automatic, demand free, dispensing device designed to be used with Chesterton's high performance greases. The refillable unit prevents both over and under filling of bearing housings and saves labor downtime for re-lubricating and replacing costly bearings.

Construction:

Transparent polycarbonate

Reservoir capacity:

56,7 g (2 oz)

Dimensions:

Diameter 60,3 mm (2-3/8 in)
Height 117,5 mm (4-5/8 in)

Temperature limits:

-23°C (-10°F) to 121°C (250°F)

Connections:

1/8 NPT or 1/8 BSP

LUBRI-CUP	REORDER NUMBER
NPT Thread	086047
BSP Thread	083021



LUBRI-CUP™ DISPENSERS

A range of automatic single-point and multi point lubricators that dispenses Chesterton grease and oil to critical areas, eliminating over- and under-lubrication.

These user friendly units have a compact, convenient and sturdy design that is simple to operate and maintain. When used with Chesterton lubricants they offer extended equipment life and reliability even under the harshest conditions of load, temperature and corrosion.

Lubri-Cup™ DISPENSERS
Contact Customer Service

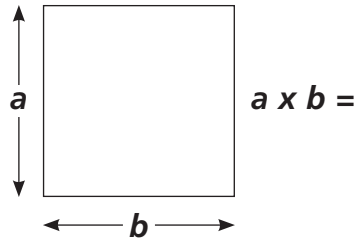


TECHNICAL SPECIFICATIONS

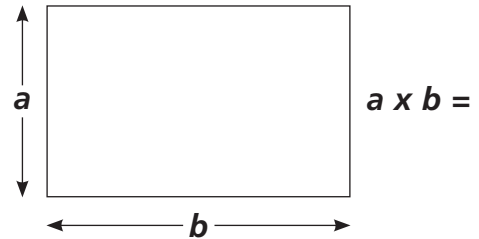
CALCULATING SQUARE FOOTAGE

TO CALCULATE

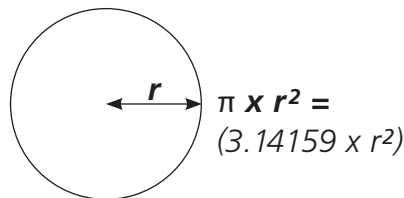
The Area of a Square



The Area of a Rectangle



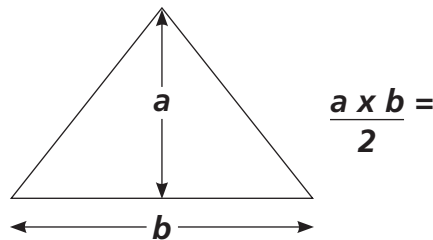
The Area of a Circle



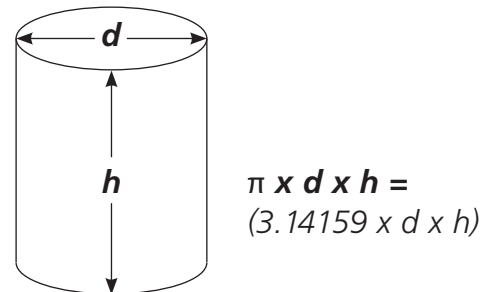
The Circumference of a Circle



The Area of a Triangle



The Area of a Cylinder



UNITS OF MEASURE

GEOMETRIC FIGURES

Circle, area of = $D^2 \times 0.7854 = \pi r^2$

r = radius

Circle, circumference of = πD or $2\pi r$

Sphere, area of = πD^2

Sphere, area of = $4\pi r^2$

D = diameter

Sphere, volume of = $D^3 \times 0.5236$

Sphere, volume of = $\frac{4}{3}\pi r^3$

Triangle, area of = $\frac{1}{2}$ altitude x base

Cone, volume of = area of base x $\frac{1}{3}$ altitude

Trapezoid, area of = $\frac{1}{2}$ (sum of parallel sides) x altitude

Pyramid, volume of = area of base x $\frac{1}{3}$ altitude

MISCELLANEOUS CONSTANTS

π = 3.14159

e = 2.71828

$\log_e X = 2.30259 \log_{10} X$

Electronic charge = 4.5×10^{-10} e.s.u.

Electronic charge = 1.60×10^{-20} e.m.u.

Mass units = 1.07×10^{-3} x Mev

Mass units = 6.71×10^2 x ergs

Speed of light = 3×10^8 meter/sec.

Speed of sound (in air at sea level) = 1100 ft./sec.

UNITS OF MEASURE

MARINERS MEASURE

6 feet = 1 fathom
 120 fathoms = 1 cable length (U.S.N.)
 8.439 cable lengths = 1 nautical mile
 6076.12 feet = 1 nautical mile
 1 nautical mile = 1.15 statute mile (international)

METRIC SYSTEM CONVERSION

Inches x .0254 = Meters
 Feet x .305 = Meters
 Yards x .914 = Meters
 Miles x 1609 = Meters
 Miles x 1.609 = Kilometers
 Millimeters x .03937 = Inches
 Centimeters x .3937 = Inches
 Meters x 39.37 = Inches
 Meters x 3.281 = Feet
 Meters x 1.094 = Yards
 Kilometers x .621 = Miles
 Square Centimeters x .155 = Sq. Inches
 Square Meters x 10.764 = Sq. Feet
 Square Meters x 1.186 = Sq. Yards
 Cubic Centimeters x .061 = Cubic Inches
 Cubic Inches x 16.2 = Cubic Centimeters
 Liters x .2642 = Gallons
 Gallons x 3.78 = Liters
 Cubic Meters x 1.308 = Cubic Yards
 Cubic Yards x .765 = Cubic Meters

METRIC SYSTEM PREFIXES

Mega = 1,000,000
 Kilo = 1,000
 Hecto = 100
 Deka = 10
 Deci = 0.1
 Centi = 0.01
 Milli = 0.001
 Micro = 0.000001
 Tera (T) = 10^{12}
 Giga (G) = 10^9
 Nano (N) = 10^{-9}
 Pico (P) = 10^{-12}

LENGTH

1 centimeter = 0.3937 inch
 1 centimeter = 0.0328 foot
 1 meter = 39.37 inches
 1 meter = 1.0936 yards
 1 kilometer = 0.62137 mile
 1 kilometer = 3280 feet
 1 inch = 2.54 centimeters
 1 foot = 0.3048 meter
 1 mil = 0.001 inch

SQUARE MEASURE

1 sq. centimeter = 0.1550 sq. in.
 1 sq. meter = 1.196 sq. yd.
 1 sq. meter = 10.764 sq. ft.
 1 sq. kilometer = 0.386 sq. mile
 1 sq. inch = 6.452 sq. centimeters
 1 sq. foot = 929.03 sq. centimeters
 1 sq. foot = 0.092903 sq. meter
 1 sq. yard = 0.8361 sq. meter
 1 sq. mile = 2.59 sq. kilometers
 1 circular mil = 0.7854 sq. mils
 1 sq. inch = 1,000,000 sq. mils

CUBIC MEASURE

1 cubic centimeter = 0.061 cubic inches
 1 cubic inch = 16.39 cubic centimeters
 1 cubic meter = 1.308 cubic yards
 1 cubic meter = 35.316 cubic feet
 1 gallon (U.S.) = 231 cubic inches
 1 cubic foot = 7.48 gallons
 1 liter = 1,000 cubic centimeters

TIME

1 day = 86,400 seconds
 1 year = 8,760 hours (approximately)

VELOCITY

1 ft./sec. = 0.3048 meter/sec.
 1 meter/sec. = 3.281 ft./sec.
 1 ft./min. = 0.00508 meter/sec.
 1 meter/sec. = 196.9 ft./min.
 1 mile/hr. = 0.4470 meter/sec.
 1 meter/sec. = 2.237 mile/hr.
 1 kilometer/hr. = 0.2778 meter/sec.
 1 meter/sec. = 3.60 kilometer/hr.

ACCELERATION

1 ft./sec./sec. = 0.3048 meter/sec./sec.
 1 mile/hr./sec. = 0.4470 meter/sec./sec.
 1 kilometer/hr./sec. = 0.2778 meter/sec./sec.
 Standard gravitation = 9.806 meter/sec./sec.
 Standard gravitation = 980.6 centimeter/sec./sec.
 Standard gravitation = 32.2 ft./sec./sec.

MASS

1 slug = 32.2 pounds mass
 1 slug = 14.606 kilograms
 1 pound mass = 453.6 grams

FORCE

1 pound force = 1 slug x 1 ft./sec./sec.
 1 dyne = 1 gram x 1 centimeter/sec./sec.
 1 newton = 1 kilogram x 1 meter/sec./sec.
 1 pound force = 4.452 newtons
 1 newton = 100,000 dynes
 1 newton = 0.224 pound force
 1 gram force = 980.6 dynes

PRESSURE

1 atmosphere = 14.69 pounds/sq. inch
 1 atmosphere = 29.92 inches of Hg
 1 atmosphere = 76 centimeters of Hg
 1 atmosphere = 33.9 feet of water
 1 inch of Hg = 0.491 pounds/sq. inch
 Water pressure pounds/sq. inch = head in feet x 0.434
 Hg (Mercury)

TORQUE

Torque is the product of force and perpendicular distance
 1 lb./ft. = 1.356 newton/meter
 1 lb./ft. = 1.356 joule/radian
 1 lb./ft. = 1.356 x 10^7 dynes/centimeter
 1 lb./ft. = 1.383 x 10^4 grams/centimeter
 1 lb./ft. = 192 ounce/inches

WORK AND ENERGY – MECHANICAL

1 erg = 1 dyne x 1 centimeter
 1 joule = 1 newton x 1 meter
 1 joule = 10^5 dynes x 10^2 centimeters
 1 joule = 10^7 ergs
 1 ft./lb. = 1 pound force x 1 foot
 1 ft./lb. = 1.356 joules

WORK AND ENERGY – HEAT EQUIVALENT

1 Btu raises 1 pound of water 1°F
 1 gram calorie raises 1 gram of water 1°C
 1 Btu = 252 gram calories
 1 Btu = 778.3 ft./lb.
 1 Btu = 1054.8 joules
 1 gram calorie = 0.003964 Btu
 1 gram calorie = 4.184 joules
 1 horsepower hour = 2545 Btu

WORK AND ENERGY – ELECTRICAL EQUIVALENT

1 joule = 1 watt x 1 second
 1 joule = 1 amp (DC) x 1 volt (DC) x 1 sec.
 W (joules) = $1/2 L$ (henries) x 1 (amperes)²
 W (joules) = $1/2 C$ (farads) x E (volts)²
 1 kilowatt hour = 3,600,000

POWER

1 watt = 1 joule/sec.
 1 horsepower = 550 ft./lb./sec.
 1 horsepower = 746 watts
 1 watt = 3.413 Btu/hr.
 1 watt = 0.239 gram calorie/sec.
 P watts = R (ohms) x 1 (amperes)²
 P watts = E (volts)² / R (ohms)

ANGLES

1 circle = 2π radians
 1 circle = 360 degrees
 1 radian = 57.3 degrees
 1 degree = 0.01745 radians

COMMON FRACTIONS REDUCED TO DECIMALS

8ths	16ths	32nds	64ths		8ths	16ths	32nds	64ths		8ths	16ths	32nds	64ths	
-	-	-	1	.015625	-	-	-	23	.359375	-	-	-	45	.703125
-	-	1	2	.03125	3	6	12	24	.375	-	-	23	46	.71875
-	-	-	3	.046875	-	-	-	25	.390625	-	-	-	47	.734375
-	1	2	4	.0625	-	-	13	26	.40625	6	12	24	48	.75
-	-	-	5	.078125	-	-	-	27	.421875	-	-	-	49	.765625
-	-	3	6	.09375	-	7	14	28	.4375	-	-	25	50	.78125
-	-	-	7	.109375	-	-	-	29	.453125	-	-	-	51	.796875
1	2	4	8	.125	-	-	15	30	.46875	-	13	26	52	.8125
-	-	-	9	.140625	-	-	-	31	.484375	-	-	-	53	.828125
-	-	5	10	.15625	4	8	16	32	.5	-	-	27	54	.84375
-	-	-	11	.171875	-	-	-	33	.515625	-	-	-	55	.859385
-	3	6	12	.1875	-	-	17	34	.53125	7	14	28	56	.875
-	-	-	13	.203125	-	-	-	35	.546875	-	-	-	57	.890625
-	-	7	14	.21875	-	9	18	36	.5625	-	-	29	58	.90625
-	-	-	15	.234375	-	-	-	37	.578125	-	-	-	59	.921875
2	4	8	16	.25	-	-	19	38	.59375	-	15	30	60	.9375
-	-	-	17	.265625	-	-	-	39	.609375	-	-	-	61	.953125
-	-	9	18	.28125	5	10	20	40	.625	-	-	31	62	.96875
-	-	-	19	.296875	-	-	-	41	.640625	-	-	-	63	.984375
-	5	10	20	.3125	-	-	21	42	.65625	8	16	32	64	1
-	-	-	21	.328125	-	-	-	43	.671875					
-	-	11	22	.34375	-	11	22	44	.6875					

CONVERSION TABLE

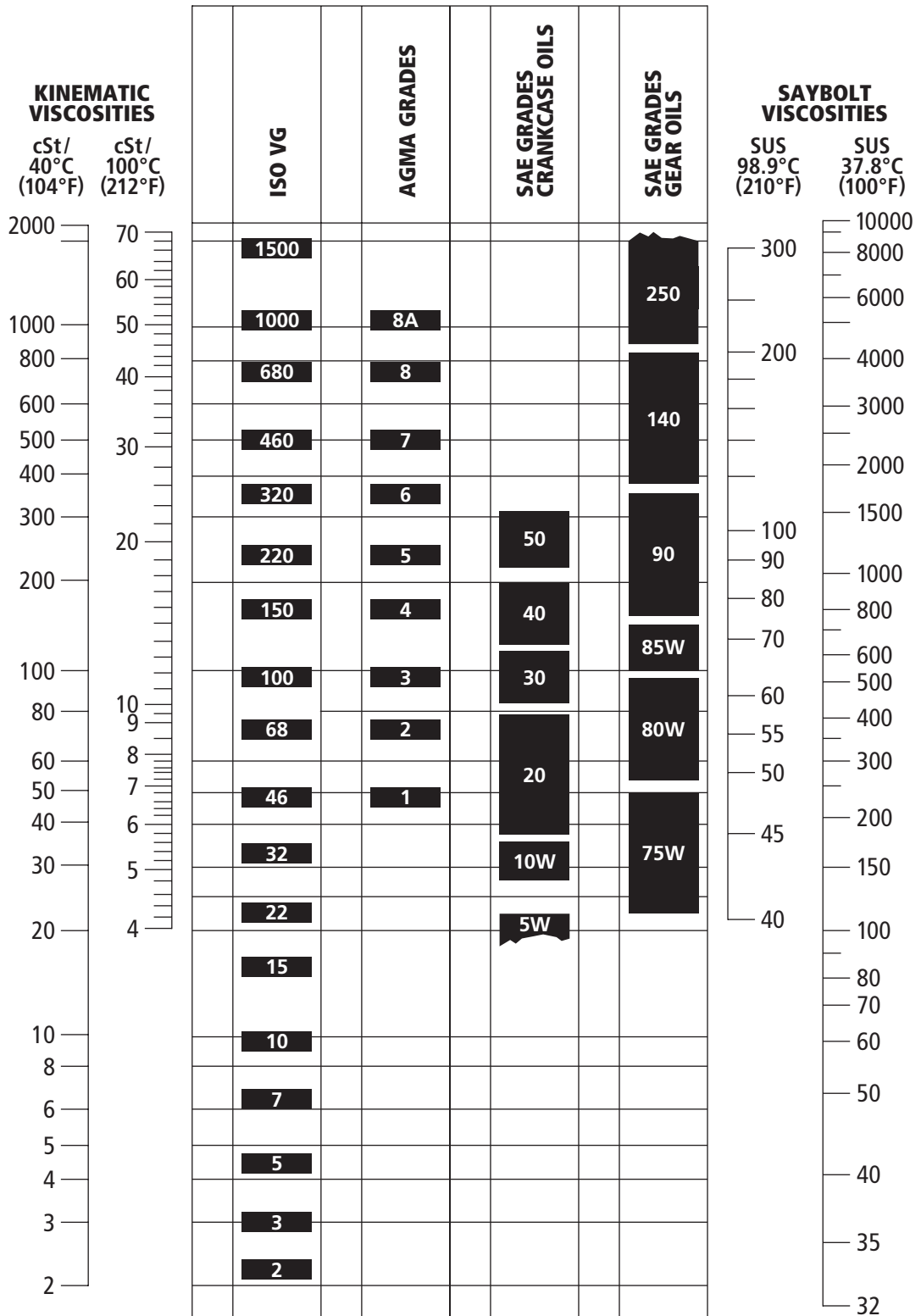
MULTIPLY	BY	TO OBTAIN	MULTIPLY	BY	TO OBTAIN
Atmospheres	33.90	feet of water	Horsepower/hrs.	2545	Btu
	29.92	inches of mercury		1.98 x 10 ⁶	foot pounds
				2.684 x 10 ⁶	joules
Btu	14.69	pounds per sq. inch	Inches of mercury	.03342	atmospheres
	252	calories (gram) (15°)		1.133	feet of water
	778.3	foot pounds		.4912	pounds per sq. inch
	.0003929	horsepower/hrs.	Joules	.0009478	Btu
	1054.8	joules		.7376	foot pounds
Btu per min.	.0002930	kilowatt/hrs.	.0002778	watt hours	
	12.97	foot pounds per sec.	1.0	watt seconds	
	.02357	horsepower	Kilowatt/hrs.	3413	Btu
17.58	watts	3.6 x 10 ¹³		ergs	
Calories	.003968	Btu	Lux	.0929	foot candles
Erg	9.478 x 10 ⁻¹¹	Btu	Meters	100	centimeters
	1.0	dyne centimeters		39.37	inches
		7.376 x 10 ⁻⁸	foot pounds	Radians	57.3
Feet of water	.02950	atmospheres	Watts	.05689	Btu per min.
	.8826	inches of mercury		1.0 x 10 ⁷	ergs per sec.
	.4335	pounds per sq. inch		44.26	foot pounds per min.
Foot pounds per sec.	.07712	Btu per min.		.00134	horsepower
	.001818	horsepower			
	.001356	kilowatts			
Foot candle	10.765	lux			
Horsepower	42.41	Btu per min.			
	33,000	foot pounds per min.			
	550	foot pounds per sec.			
	.7457	kilowatts			

TEMPERATURE CONVERSION TABLE

TEMP. °C	TEMP. °F	TEMP. °C	TEMP. °F	TEMP. °C	TEMP. °F
427	800	1472	743	1370	2498
432	810	1490	749	1380	2516
438	820	1508	754	1390	2534
443	830	1526	760	1400	2552
449	840	1544	765	1410	2570
454	850	1562	771	1420	2588
460	860	1580	777	1430	2606
466	870	1598	782	1440	2624
471	880	1616	788	1450	2642
477	890	1634	793	1460	2660
482	900	1652	799	1470	2678
488	910	1670	804	1480	2696
493	920	1686	810	1490	2714
499	930	1706	816	1500	2732
504	940	1724	821	1510	2750
510	950	1742	827	1520	2768
516	960	1760	832	1530	2786
521	970	1778	838	1540	2804
527	980	1796	843	1550	2822
532	990	1814	849	1560	2840
538	1000	1832	854	1570	2856
543	1010	1850	860	1580	2876
549	1020	1868	866	1590	2894
554	1030	1886	871	1600	2912
560	1040	1904	877	1610	2930
566	1050	1922	882	1620	2948
571	1060	1940	888	1630	2966
577	1070	1958	893	1640	2984
582	1080	1976	899	1650	3002
588	1090	1994	904	1660	3020
593	1100	2012	910	1670	3038
599	1110	2030	916	1680	3056
604	1120	2048	921	1690	3074
610	1130	2066	927	1700	3092
616	1140	2084	932	1710	3110
621	1150	2102	938	1720	3128
627	1160	2120	943	1730	3146
632	1170	2138	949	1740	3164
638	1180	2156	954	1750	3182
643	1190	2174	960	1760	3200
649	1200	2192	966	1770	3218
654	1210	2210	971	1780	3236
660	1220	2228	977	1790	3254
666	1230	2246	982	1800	3272
671	1240	2264	988	1810	3290
677	1250	2282	993	1820	3308
682	1260	2300	999	1830	3326
688	1270	2318	1004	1840	3344
692	1280	2336	1010	1850	3362
699	1290	2354	1016	1860	3380
704	1300	2372	1021	1870	3398
710	1310	2390	1027	1880	3416
716	1320	2408	1032	1890	3434
721	1330	2426	1038	1900	3452
727	1340	2444	1043	1910	3470
732	1350	2462	1049	1920	3488
738	1360	2480	1054	1930	3506
				1940	3524
				1950	3542
				1960	3560
				1970	3578
				1980	3596
				1990	3614
				2000	3632

NOTE:
THE NUMBERS IN BOLD REFER TO THE TEMPERATURE EITHER IN DEGREES CENTIGRADE OR FAHRENHEIT WHICH IS DESIRED TO CONVERT INTO THE OTHER SCALE.

VISCOSITY EQUIVALENTS



- Viscosities can be related horizontally.
- Viscosities based on 95 VI single grade oils.
- ISO are specified at 40°C (104°F).
- AGMA are specified at 37.8°C (100°F).

- SAE 75W, 80W, 85W, 5W and 10W specified at low temperatures. Equivalent Viscosities for 100°C and 212°F are shown.
- SAE 90 and 250 and 20 to 50 specified at 98.9°C (210°F).

KINEMATIC VISCOSITY/ISO SYSTEM

ISO GRADE	VISCOSITY RANGE cSt @ 38°C (100°F)	
2	1.98	2.42
3	2.88	3.52
5	4.14	5.06
7	6.12	7.48
10	9.00	11.00
15	13.50	16.50
22	19.80	24.20
32	28.80	35.20
46	41.40	50.60
68	61.20	74.80
100	90.00	110.00
150	135.00	165.00
220	198.00	242.00
320	288.00	352.00
460	414.00	506.00
680	612.00	748.00
1000	900.00	1100.00
1500	1350.00	1650.00

HANDY GUIDE TO TAP DRILL SIZES

THREAD	TAP DRILL	THREAD	TAP DRILL
#6 – 32	No. 36	5/8 – 11	17/32
#6 – 40	No. 33	5/8 – 18	37/64
#8 – 32	No. 29	3/4 – 10	21/32
#8 – 36	No. 29	3/4 – 16	11/16
#10 – 24	No. 25	7/8 – 9	49/64
#10 – 32	No. 21	7/8 – 14	13/16
#12 – 24	No. 16	1 – 8	7/8
#12 – 28	No. 14	1 – 12	59/64
1/4 – 20	No. 7	1 – 14	15/16
1/4 – 28	No. 3		
5/16 – 18	F		
5/16 – 24	I		
3/8 – 16	5/16		
3/8 – 24	Q		
7/16 – 14	U		
7/16 – 20	25/64		
1/2 – 13	27/64		
1/2 – 20	29/64		
9/16 – 12	31/64		
9/16 – 18	33/64		

Based on approximate 75% full thread

MATERIAL SELECTION CHART FOR CLEANERS

MATERIAL	CLEANER	PROCESS
Aluminum	Low alkaline*	Any, but caution should be exercised when ultrasonics are used because surface etching may occur
Copper	Moderate alkaline	Same as aluminum
Ferrous metals	Moderate alkaline	Any
Glass	Moderate alkaline	Any, but caution should be used with ultrasonics
Magnesium	Solvents only	Any
Mild steel	Moderate alkaline pH below 10 preferred	Any
Cold rolled steel	Moderate alkaline	Any
Painted surfaces	Low alkaline*	Any, but ultrasonics could affect adhesion
Plastics	Low alkaline	Any
Precious gems	Low alkaline caustic and solvent free	Ultrasonics preferred
304 stainless steel	High alkaline	Any
316 stainless steel	High alkaline	Any

*Should check for compatibility before using

THE MECHANICS OF CLEANING

Listed below are some of the most commonly used terms in aqueous cleaning. An effective cleaner can utilize some or all of the following types of chemical reaction methods.

Wetting

Surface Acting Agents commonly referred to as surfactants allow the cleaner to penetrate and loosen soils from the substrate by lowering the surface tension.

Emulsification

After the surfactants have lowered the surface tension, the emulsifiers allow two mutually immiscible fluids like oil and water to be temporarily dispersed. The oil droplets get a thin coating of surfactant that prevent them from reforming and floating to the surface. Emulsions are usually temporary to allow the oil and water to split for easy disposal.

Saponification

The reaction between a natural organic oil (like animal fat or vegetable oil) that contains reactive fatty acids with free alkalies to form soaps. This is a permanent reaction.

Deflocculation

The process of breaking up large clumps of soil into fine particles and dispersing them throughout the cleaning solution. A good deflocculant will keep the soils dispersed thus preventing them from recombining or agglomerating.

Sequestration

Prevents the formulation of soap scum and salt deposits by undesirable ions like calcium magnesium, and heavy metals by deactivating them.

WHAT MAKES UP AN EFFECTIVE WATER BASED CLEANER?

Following are some of the key ingredients that make up effective water based cleaners, brief explanations of their functions and some examples.

Surface Active Agents (Surfactants)

Basic component of water based cleaners

Lowers surface tension of water

Emulsifier, dispersant, soil suspender

Many different chemical families are considered surfactants including: sulfonates, esters, and nonyl phenols.

Can be naturally occurring or synthetic

Different ionic charges: anionic, cationic, or nonionic

Builders

Alkaline substances

Enhance performance of surfactants

Buffer water

Improve soil suspension

Some examples are: trisodium phosphate, potassium phosphate, sodium silicate and sodium carbonate

Grease Cutters

Water soluble organic solvents

Some examples are: alcohol, glycol ethers, like butyl cellosolve or emulsifiable solvents like terpenes or mineral spirits

Alkali

Generally sodium hydroxide (NaOH) or potassium hydroxide (KOH)

Saponifies animal and vegetable oils

Neutralizes acids

Buffers water

Raises pH of cleaner (high alkaline)

Consumed in chemical reaction

Chelates

Softens water

Example:

Ethylene diamine tetraacetate (EDTA)

In addition to the previous components, most aqueous cleaners need external help to be truly effective.

Work

Needed in many cases

Examples:

Scrubbing, agitation, pressure, cavitation

Heat

Accelerates chemical reactions

Reduces viscosity

METHOD OF LUBRICATION

SHAFT DIAMETER Up to 2.54 cm (1")	OPERATING TEMPERATURES		LUBRICANT RECOMMENDED	
	°C	°F	Oil Viscosity Sec. @ (100°F)	Greases NLGI Consistency Number
Up to 1000 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 1000	2
	93.3	Over 200	1500 to 2500	2 to 3
1000 to 3000 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 600	2
	93.3	Over 200	700 to 1000	2
3000 to 10,000 rpm	Below 0°	Below 32°	90 to 120	0 to 1
	0 to 37.8	32 to 100	150 to 185	0 to 1
	37.8 to 93.3	100 to 200	250 to 350	1
	93.3	Over 200	500 to 1000	2
Over 10,000 rpm	Below 0°	Below 32°	33 to 85	0 to 1
	0 to 37.8	32 to 100	50 to 110	0 to 1
	37.8 to 93.3	100 to 200	75 to 250	1
	93.3	Over 200	350 to 550	2

SHAFT DIAMETER 2.54 cm to 5.08 cm (1" to 2")	OPERATING TEMPERATURES		LUBRICANT RECOMMENDED	
	°C	°F	Oil Viscosity Sec. @ (100°F)	Greases NLGI Consistency Number
Up to 500 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 1000	2
	93.3	Over 200	1500 to 2500	2 to 3
500 to 1500 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 600	2
	93.3	Over 200	700 to 1000	2
1500 to 5000 rpm	Below 0°	Below 32°	90 to 120	0 to 1
	0 to 37.8	32 to 100	150 to 185	0 to 1
	37.8 to 93.3	100 to 200	250 to 350	1
	93.3	Over 200	500 to 1000	2
Over 5000 rpm	Below 0°	Below 32°	33 to 85	0 to 1
	0 to 37.8	32 to 100	50 to 110	0 to 1
	37.8 to 93.3	100 to 200	75 to 250	1
	93.3	Over 200	350 to 550	2

SHAFT DIAMETER 5.08 cm to 7.62 cm (2" to 3")	OPERATING TEMPERATURES		LUBRICANT RECOMMENDED	
	°C	°F	Oil Viscosity Sec. @ (100°F)	Greases NLGI Consistency Number
Up to 300 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 1000	2
	93.3	Over 200	1500 to 2500	2 to 3
300 to 1000 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 600	2
	93.3	Over 200	700 to 1000	2
1000 to 3000 rpm	Below 0°	Below 32°	90 to 120	0 to 1
	0 to 37.8	32 to 100	150 to 185	0 to 1
	37.8 to 93.3	100 to 200	250 to 350	1
	93.3	Over 200	500 to 1000	2
Over 3000 rpm	Below 0°	Below 32°	33 to 85	0 to 1
	0 to 37.8	32 to 100	50 to 110	0 to 1
	37.8 to 93.3	100 to 200	75 to 250	1
	93.3	Over 200	350 to 550	2

METHOD OF LUBRICATION

SHAFT DIAMETER 7.62 cm to 10.16 cm (3" to 4")	OPERATING TEMPERATURES		LUBRICANT RECOMMENDED	
	°C	°F	Oil Viscosity Sec. @ (100°F)	Greases NLGI Consistency Number
Up to 200 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 1000	2
	93.3	Over 200	1500 to 2500	2 to 3
200 to 750 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 600	2
	93.3	Over 200	700 to 1000	2
750 to 2000 rpm	Below 0°	Below 32°	90 to 120	0 to 1
	0 to 37.8	32 to 100	150 to 185	0 to 1
	37.8 to 93.3	100 to 200	250 to 350	1
	93.3	Over 200	500 to 1000	2
Over 2000 rpm	Below 0°	Below 32°	33 to 85	0 to 1
	0 to 37.8	32 to 100	50 to 110	0 to 1
	37.8 to 93.3	100 to 200	75 to 250	1
	93.3	Over 200	350 to 550	2

SHAFT DIAMETER Over 10.16 cm (4")	OPERATING TEMPERATURES		LUBRICANT RECOMMENDED	
	°C	°F	Oil Viscosity Sec. @ (100°F)	Greases NLGI Consistency Number
Up to 100 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 1000	2
	93.3	Over 200	1500 to 2500	2 to 3
100 to 500 rpm	Below 0°	Below 32°	150 to 185	0 to 1
	0 to 37.8	32 to 100	250 to 350	1
	37.8 to 93.3	100 to 200	400 to 600	2
	93.3	Over 200	700 to 1000	2
500 to 1000 rpm	Below 0°	Below 32°	90 to 120	0 to 1
	0 to 37.8	32 to 100	150 to 185	0 to 1
	37.8 to 93.3	100 to 200	250 to 350	1
	93.3	Over 200	500 to 1000	2
Over 1000 rpm	Below 0°	Below 32°	33 to 85	0 to 1
	0 to 37.8	32 to 100	50 to 110	0 to 1
	37.8 to 93.3	100 to 200	75 to 250	1
	93.3	Over 200	350 to 550	2

NSF CATEGORY CODE LETTERS

The following code letters designate the permissible use for each authorized compound, and conditions for use are restricted by the category in which it is placed.

NOTE: In several categories, reference is made to the need for rinsing with potable water. FIAD accepts water used in federally inspected plants as being potable when such certification is made by state health agency authorities.

A. Cleaning Compounds

A1 – Compounds for use as general cleaning agents on all surfaces, or for use with steam or mechanical cleaning devices in all departments.

Before using these compounds, food products and packaging materials must be removed from the room or carefully protected.

After using these compounds, surfaces must be thoroughly rinsed with potable water.

A2 – Compounds for use only in soak tanks or with steam or mechanical cleaning devices in all departments.

Before using these compounds, food products and packaging materials must be removed from the room or carefully protected.

After using these compounds, all surfaces in the area must be thoroughly rinsed with potable water.

A3 – Acid Cleaners for use in all departments

Before using these compounds, food products and packaging must be removed from the room or carefully protected. After using these compounds, all surfaces in the area must be thoroughly rinsed with potable water.

A4 – Floor and Wall Cleaners for use in all departments.

Before using these compounds, food products and packaging materials must be removed from the room or carefully protected.

After using these compounds, all surfaces in the area must be thoroughly rinsed with potable water.

C. Compounds used in Inedible and Non-processing Areas

C1 – Compounds for use on all surfaces in inedible product processing areas, non-processing areas, and/or exterior areas.

These compounds must not be used to mask odors resulting from unsanitary conditions.

They must be used in a manner that prevents penetration of any characteristic odor or fragrance into edible product areas.

Compounds containing isomers of dichlorobenzene, or other substances toxic by inhalation, may be used only in areas where there is adequate ventilation to prevent accumulation of hazardous vapors.

Permission for use of these compounds on loading docks and other similar areas is left to the discretion of the inspectors in charge of the plants.

H. Lubricants

H1 – Lubricants

These compounds may be used as a lubricant or anti-rust film on equipment and machine parts in locations in which there is exposure of the lubricated part to edible products. They may also be used as a release agent on gaskets and seals of tank closures. The amount used should be the minimum required to accomplish the desired technical effect on the equipment. If used as an anti-rust film, the compound must be removed from the equipment surface by washing or wiping as required to leave the surface effectively free of any substance, which could be transferred to food being processed.

H2 – Lubricants

These compounds may be used as a lubricant, release agent, or anti-rust film on equipment and machine parts or in closed systems (e.g., hydraulic systems) in locations in which there is no possibility of the lubricant or lubricated part contacting edible products.

K. Solvent Cleaners

K1 – Solvents and Solvent Degreasers for use in non-processing areas.

Following the use of these compounds, equipment and utensils must be thoroughly washed and rinsed with potable water before being returned to a processing area.

K2 – Solvents for cleaning electronic instruments.

These compounds are chemically acceptable for cleaning electronic instruments and devices that will not tolerate aqueous cleaning solutions. Before using these compounds, food products and packaging materials must be removed from the area or carefully protected. These compounds must be used in a manner so that all odors associated with the compound are dissipated before food products or packaging materials are re-exposed in the area.

P. Compounds Requiring Letter Indicating Authorized Use

P1 – Miscellaneous

Compounds listed in this category are to be used in accordance with the conditions set forth in the letter of acceptance. Copies of the acceptance letter must be supplied to Federal Inspectors as proof of the acceptable use(s) of the compound.

SPECIFICATIONS

PRODUCT SPECIFICATIONS AND QUALIFICATIONS

PRODUCT	NSF	FDA	MILITARY/FEDERAL SPECIFICATION	OTHER
218 HDP	A1 133943	–	–	–
235 SSC	A4 133964	–	–	–
273 Electric Motor Cleaner	K2 133975 K2 133976	–	–	Underwriters Lab (UL) (Aerosol Only)
274 Industrial Degreaser	C1, K1, K2 133955 C1, K1, K2 133949 (aerosol)	178.3530	–	–
276 Electronic Component Cleaner	K2 133974 (bulk) K2 133973 (aerosol)	172.882 172.884 178.3530 178.3650	–	–
277 Metal Surface Degreaser	C1, K1 134007 (bulk) C1, K1 134008 (aerosol)	172.882 172.884 178.3530	–	–
279 PCS	K2 134012	–	–	German IGI250121/29
292 Precision Degreasing Solvent	K1, K2, K3 134003 K1, K2, K3 134004 (aerosol)	178.3530 178.3570	–	–
296 Electro Contact Cleaner	K2 134002	–	–	–
294 CSD	C1, K1, K3 143867	–	–	–
346 Descaler & Chemical Cleaner	A3 133962	–	–	–
360 Phosphate-Free Cleaner	A1, A4 133961	–	–	–
390 Cutting Oil	H2, P1 134014 H2, P1 134947 (aerosol)	–	–	–
395 Tapping Lubricant	H2 133935	–	–	–
438 PTFE Coating	H2 133950 (aerosol) H2 133951 (bulk)	–	–	–
601 Chain Drive Pin & Bushing Lubricant	H2 133927 (aerosol) H2 133979 (bulk)	–	–	–
610 Synthetic Lubricating Fluid	H2 133972 (aerosol) H2 133971 (bulk)	–	–	–
615 HTG #1	H2 133941	–	–	–
615 HTG #2	H2 133940	–	–	–
622 White Grease	H1 133929	178.3570 177.1550	–	–
625 CXF	H1 138414	178.3620 178.3570	–	–
629 High Temperature White Grease	H1 133936	178.3570 177.1550	–	–
630 SXCF	H1 138415 (bulk) H1 142462 (aerosol)	178.3570	–	–
636 FG SLF-220	H1 147202	178.3570	–	–
651 Detergent Lubricating Oil	H2 133946 (bulk) H2 133928 (aerosol)	–	–	–
652 Pneumatic Lubricant & Conditioner	H2 133944	–	–	–
660 Silicone Lubricant	H1 133970 (aerosol) H1 133932 (bulk)	181.28 178.3910 178.3570 178.884 178.3650	–	–
662FG Barrier Fluid 22	H1 143837	–	–	–
690FG Lubricant	H1 133933 (aerosol) H1 133969 (bulk)	178.3620	–	–
706 Rustsolvo®	H2 133942	–	–	–
710 Anti-Seize Compound	H2 133958	–	MIL-A-907	QPL-907

SPECIFICATIONS

PRODUCT SPECIFICATIONS AND QUALIFICATIONS

PRODUCT	NSF	FDA	MILITARY/FEDERAL SPECIFICATION	OTHER
715 Spraflex® Standard and Gold	H2 133938 H2 133934 (aerosol) H2 133930 (Gold) H2 133931 (Gold aerosol)	—	—	—
723 Sprasolvo® 723FG Sprasolvo®	H2 133939 H1 134006 (FG)	— 172.884 178.3620 178.3650 178.3570	—	—
725 Nickel Anti-Seize Compound	H2 133959	—	MIL-A-907	—
730 Spragrip®	P1 133947	—	—	—
740 Heavy Duty Rust Guard	—	—	MIL-C-16173D Grade 1 & 4	—
752 Cold Galvanizing Compound	—	—	MIL-P-46105 MIL-P-26915 MIL-P-21035	—
775 Moisture Shield	H2 134015	—	MIL-C-81309D TYPE II MIL-C-16173D TYPE III	—
785 Parting Lubricant (Bulk)	H2 133960	—	DVGW	—
785 FG Parting Lubricant	H1 132237	—	—	—
787 Sliding Paste	H2 133956	—	—	—
800 GoldEnd® Tape	H1, P1 134016	177.1615 177.1550	MIL-T-27730A	Underwriters Lab USA (UL) Canada (ULC) DVGW 96.01e907 EN751-3 OXYGEN CERTIFIED, BAM Ref. No. 11.1/46 513
801 Industrial & Marine Solvent	A1, A4, A8 133965	—	—	—
803 Industrial & Marine Solvent II	A1 133966	—	—	—
820 KPC	A1 133963	—	—	—
820N KPC	A1, A4 133977	—	—	—
860 Moldable Polymer Gasketing	P1 134017 (aerosol) P1 134018 curing	175.300 177.2600	—	—
900 GoldEnd® Paste	H2, P1 133957	—	—	Underwriters Lab (UL)
3500 Valvelon®	P1 134013	—	—	—

GLOSSARY OF TERMS

ACGIH TLV

The American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values (TLV) are 8-hour Time-Weighted Average (TWA) concentrations which should not be exceeded.

Concentrations are given in parts per million (ppm) or milligrams per cubic meter (mg/m³). The higher the TLV, the safer the substance.

API

American Petroleum Institute.

AGMA

American Gear Manufacturers Association.

Aromatic content

A major group of unsaturated cyclic hydrocarbons containing one or more rings, typified by benzene, which has a 6-carbon ring containing three double bonds. The vast number of compounds of this group, derived chiefly from petroleum and coal tar, are rather highly reactive and chemically versatile. The name is due to the strong and not unpleasant odor characteristics of most substances of this nature. Since most aromatics tend to have high toxicity and many are considered carcinogenic, therefore, low aromatic contents are desirable in solvents.

Asperities

The irregular features in a contact surface.

ASTM

American Society for Testing and Materials.

Axial

Referring to the length of an object, for example an axial load on a shaft is parallel to the length (axis) of that shaft.

Boundary Lubrication

That condition in which the lubricant film is discontinuous.

Babbitt

An alloy, or mixture of metals that is softer than the metal used in the rotating components. It has a lower coefficient of friction and acts as a sacrificial component in the moving assembly; it will not gall or score the shaft. It is named for its inventor.

CAS#

Chemical Abstracts Registry Number.

A division of the American Chemical Society that publishes a chemistry journal and assigns numbers to all chemical compounds.

Coefficient of Friction

The coefficient of friction is the ratio of the force required to move an object and the normal force or weight of an object. The coefficient of friction is dependent upon the nature of the material. Some coefficients of friction for various materials are:

- Bronze on bronze – 0.20
- Tool steel on tool steel – 0.42
- Mild steel on mild steel – 0.57
- Hard steel on babbitt metal – 0.34

Cone

The inner part of an antifriction bearing.

Elastohydrodynamic Lubrication

A mode of lubrication which relies on the deformation of the contact surfaces in conjunction with the viscosity of an oil at high speeds to establish a protective film.

EPA 17

The United States Environmental Protection Agency's voluntary toxics reduction incentive program, the "33/50" program, calls for a voluntary nationwide reduction of toxic waste.

The goal is a 33% reduction by 1992 for on-site and off-site releases and a 50% reduction by 1995.

The program asks companies to voluntarily reduce pollution caused by 17 high priority toxic chemicals.

This is a pollution prevention strategy to reduce threats to public health and the environment.

The 17 chemicals were chosen on the basis of 3 criteria:

- They pose environmental and health concerns.
- They are high volume industrial chemicals.
- They can be reduced through pollution prevention.

The 17 chemicals are:

Benzene, cadmium & compounds, carbon tetrachloride, chloroform, chromium & compounds, cyanides, lead & compounds, mercury & compounds, methyl ethyl ketone, methyl isobutyl ketone, methylene chloride, nickel & compounds, tetrachloroethylene, toluene, trichloroethane, trichloroethylene, xylenes.

Flammability rating

When and where possible, the flammability of a substance was determined and listed.

The following OSHA criteria (29 CFR 1910.106) were used to classify flammable or combustible liquids:

- Class IA flammable liquid Fl.P below 73°F (22.8°C) and BP below 100°F (37.8°C)
- Class IB flammable liquid Fl.P below 73°F (22.8°C) and BP at or above 100°F (37.8°C)
- Class IC flammable liquid Fl.P at or above 73°F (22.8°C) and below 100°F (37.8°C)
- Class II combustible liquid Fl.P at or above 100°F (37.8°C) and below 140°F (60°C)
- Class IIIA combustible liquid Fl.P at or above 140°F (60°C) and below 200°F (93.3°C)
- Class IIIB combustible liquid Fl.P at or above 200°F (93.3°C)

GLOSSARY OF TERMS

Flash point

The temperature at which a liquid or volatile solid gives off sufficient vapor to form an ignitable mixture with the air nearest the surface of the liquid or within the test vessel.

All measurements listed on this chart are by closed cup method unless otherwise stated. (TOC is Tag Open Cup)

Fretting

A condition of wear characterized by grooving or lines spaced at intervals around a shaft. It can be caused by oscillating motion with small amounts of play (approx. 1 micron) in the assembly. Usually design related.

Galling

Destructive wear of a metal surface characterized by large chunks of metal being removed.

Hydrodynamic Lubrication

That condition of lubrication in which a continuous film separates the moving parts.

Idler

A rotating element neither driving nor driven. It is simply used as a low friction support for a chain or belt.

IDLH

Immediately Dangerous to Life or Health concentrations (IDLH) represent the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing (e.g. severe eye irritation) or irreversible health effects. These values were determined during the Standards Completion Program only for the purpose of respirator selection. IDLH values that are in brackets denote substances that are considered to be carcinogenic by NIOSH (National Institute for Occupational Safety and Health). It should be noted that carcinogenic effects were not considered in the Standards Completion Program. No listing means that a value was not available due to lack of data.

KB value

The Kauri Butanol (KB) value is a measure of the solvent power of a hydrocarbon liquid. Kauri gum is readily soluble in butanol but insoluble in hydrocarbons. The KB value is the measure of the volume of solvent required to produce turbidity in a standard solution containing kauri gum dissolved in butanol. The higher the KB value, the more powerful the solvent.

Kinematic

Refers to viscosity measured by its rate of flow due to its mass.

Lubricity

A property of a lubricant to reduce friction beyond that expected by viscosity alone.

Naphthenic

Composed of compounds of a more cyclic and/or aromatic nature; low ashing.

Paraffinic

Composed of long straight chains of hydrocarbons.

Poise

A unit of dynamic (sheared between moving surfaces) viscosity measurement.

Race

The outer contact surface of a rolling element bearing.

Radial

Referring to something perpendicular to a rotating assembly; A radial load is at 90° to the shaft.

Rib-roller velocity

The velocity of the rollers in an antifriction bearing which will help determine the lubrication requirements of a bearing.

SAE

Society of Automotive Engineers.

Shock loading

A condition caused by sudden start-up or stoppage of equipment. Change in loading is rapid and places added stress, on bearing and other parts.

Solvent

A substance capable of dissolving another substance (solute) to form a uniformly dispersed mixture (solution) at the molecular or ionic size level.

Spalling

A condition of metal fatigue in which the surface of the metal flakes off.

Stoke

A unit of measurement for kinematic viscosity in units m²/sec.

SUS

Saybolt Universal Second; yet another unit for measurement of fluid viscosity.

Timken

Test method named for bearing manufacturer of the same name.

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