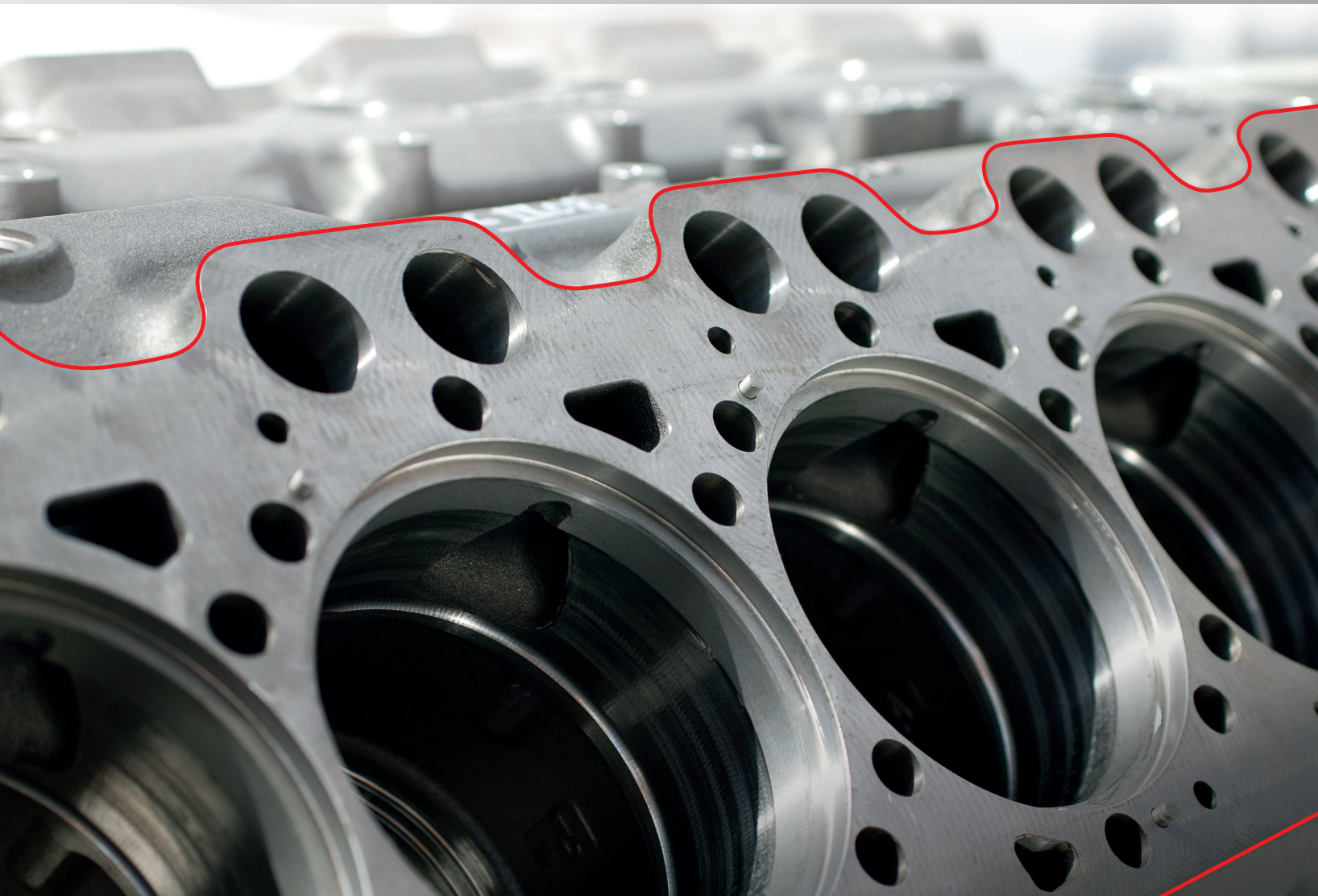


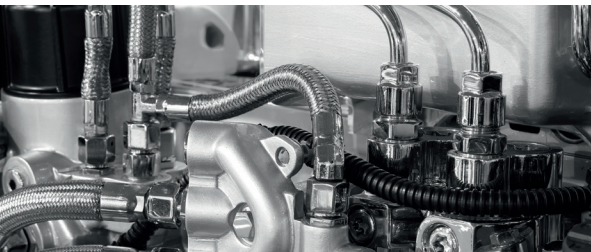


Cleaning, Remachining, Reassembly

# Remanufacturing Reference Guide



Excellence is our Passion



# MEETING THE REMANUFACTURING INDUSTRY’S BIGGEST CHALLENGES

As a global leader in surface treatment, adhesives, sealants and metalworking lubricant technologies, Henkel Corporation offers products and engineering services that can make you more competitive in the demanding business of remanufacturing.

Our R&D scientists and application engineers have developed a wide range of products for every step of the remanufacturing cycle, including market-leading solutions for cleaning, remachining and reassembly.

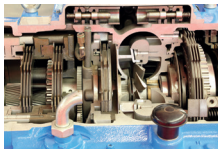
Henkel products are designed to improve finished goods reliability, reduce operating costs, and return engines, transmissions and other components back into service quickly. Through our customer partnerships, we continue to pioneer new technologies and earn the trust of the many valued remanufacturing customers we serve.

Whether you would like a consultation regarding our products’ performance or a complete turnkey process design, Henkel can provide the cost-effective solutions that will meet – or exceed – all your requirements.

## Henkel has solutions for remanufacturing:



Engines



Transmissions



Turbines



HVAC Air Compressor Pumps



Wheels



Aircraft Landing Gears



Medical and Dental Equipment



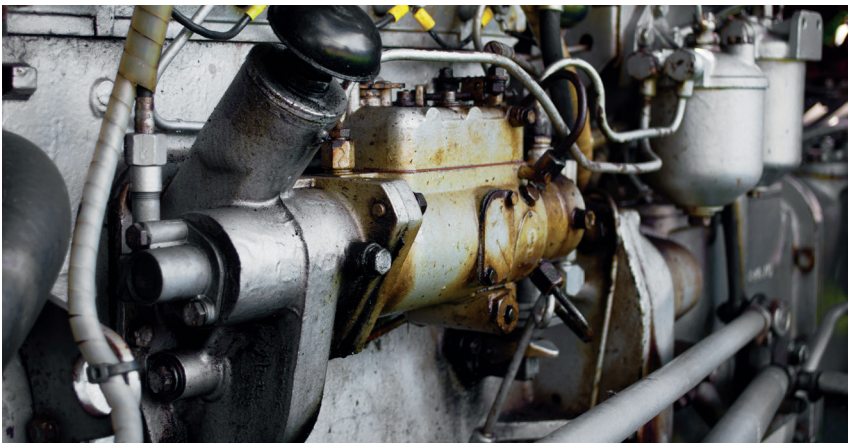
Wind Turbine Gearboxes



Railway Car Components

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# REMANUFACTURING



Remanufacturing involves a number of operational steps, beginning with disassembly of the core product (for example, an engine, transmission or turbine).

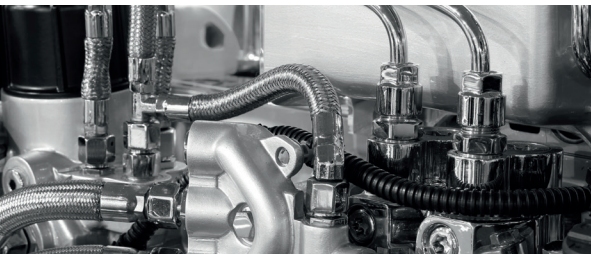
All components are first cleaned to remove any residual paint, rust, dirt, grease, oils, carbon buildup, coking and other contaminants. Each component is then thoroughly inspected. The remanufacturer then determines if the part can be salvaged and reused as is, or if it requires rework to return it to proper working condition, or if it is sufficiently worn or obsolete to require replacement.

All salvaged, refurbished, and new components are reassembled to create a remanufactured product whose performance is equal to that of a new product. From a customer's perspective, a remanufactured product is expected to match current factory specifications, meet or exceed the original expected lifetime, and may even need to comply with the latest engineering specifications and environmental requirements.

Henkel is proud to help remanufacturers become more successful at what they do. We offer cleaners to degrease, de-rust, and strip paint; lubricants and coolants to refurbish worn parts; and adhesives and sealants to reassemble core parts to like-new condition.

Our professional R&D and engineering staff can also customize formulations and design more efficient processes that deliver optimum results both on the production line and on the bottom line.





# CLEANING

## REMOVING DIRT, GREASE, OIL, METAL CHIPS, PAINT, RUST AND OTHER TOUGH SOILS

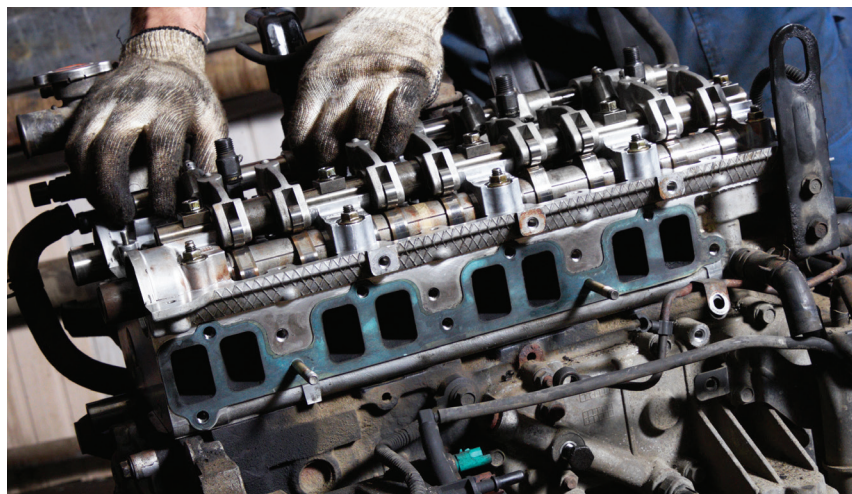
Henkel is a leading supplier of state-of-the-art metal pretreatment technologies for steel, iron, light metals, and plastics. Henkel sets high standards for cleaning, corrosion protection, paint adhesion, and environmental safety.

The BONDERITE® brand offers conversion coatings for aluminum and light metal substrates that improve paint adhesion and provide corrosion protection. These coatings include both metal pretreatments and post-rinses.

BONDERITE® has been well established in the automotive and metalworking industries as a brand for conversion coating processes and chemistries to improve paint adhesion, corrosion protection and wear resistance to ferrous-based alloys, mixed metal alloys and plastic surfaces. The products

that make up the BONDERITE® brand include: process line chemistries; cleaners; pretreatment chemistries, including activators and conditioners; conversion coating chemistries; post-treatment chemistries, including rinses and passivation; as well as auxiliary products, such as toners, additives, accelerators and neutralizers.

Our BONDERITE® cleaners are for metallic and nonmetallic surfaces, fouling prevention and corrosion protection, together with disinfection of water and use with wastewater treatments. These products are designed for use in low- and high-temperature applications at different pH ranges (acid, neutral and alkaline), and in high-pressure applications, depending on customer conditions.





## Liquid Alkaline Cleaners

| PRODUCTS                  | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |       |           | SUBSTRATE          |              | ETCH                  | TEMPERATURE     | BUILDERS |           |           |           | INTER-STAGE PROTECTION |
|---------------------------|-------------------|----------------|-------------|-------|-----------|--------------------|--------------|-----------------------|-----------------|----------|-----------|-----------|-----------|------------------------|
|                           |                   |                | LIQUID      | SPRAY | IMMERSION | STEEL / HEAVY DUTY | MULTI-METAL* | HEAVY ETCH ON AL & ZN | OPERATING TEMP. | SODIUM   | POTASSIUM | PHOSPHATE | GLUCONATE |                        |
| BONDERITE® C-AK 319™      | 596645            | 5 gallon       | ✓           | ✓     | ✓         |                    | ✓            | ✓                     | 120°F to 180°F  |          | ✓         | ✓         | ✓         |                        |
|                           | 593897            | 55 gallon      | ✓           | ✓     | ✓         |                    | ✓            | ✓                     | 120°F to 180°F  |          | ✓         | ✓         | ✓         |                        |
| BONDERITE® C-AK 305™      | 670363            | 5 gallon       | ✓           | ✓     | ✓         |                    | ✓            | ✓                     | 100°F to 140°F  |          | ✓         | ✓         | ✓         |                        |
|                           | 593947            | 55 gallon      | ✓           | ✓     | ✓         |                    | ✓            | ✓                     | 100°F to 140°F  |          | ✓         | ✓         | ✓         |                        |
| BONDERITE® C-AK 1520 A/S™ | 594224 (Part A)   | 290 kg drum    | ✓           | ✓     | ✓         | ✓                  | ✓            |                       | 110°F to 140°F  | ✓        | ✓         | ✓         |           |                        |
|                           | 595313 (Part S)   | 204 kg drum    | ✓           | ✓     | ✓         | ✓                  | ✓            |                       | 110°F to 140°F  |          |           |           |           |                        |
| BONDERITE® C-AK 319MM™    | 772258            | 5 gallon       | ✓           | ✓     | ✓         |                    | ✓            |                       | 110°F to 160°F  | ✓        | ✓         |           | ✓         | ✓                      |
|                           | 594588            | 55 gallon      | ✓           | ✓     | ✓         |                    | ✓            |                       | 110°F to 160°F  | ✓        | ✓         |           | ✓         | ✓                      |
| BONDERITE® C-AK 53™ AERO  | 790176            | 4 kg bottle    |             |       | ✓         |                    | ✓            |                       | 140°F to 160°F  | ✓        | ✓         | ✓         |           |                        |
|                           | 594633            | 215 kg drum    |             |       | ✓         |                    | ✓            |                       | 140°F to 160°F  | ✓        | ✓         | ✓         |           |                        |
| BONDERITE® C-AK 338™      | 593916            | 215 kg drum    |             | ✓     | ✓         | ✓                  | ✓            | ✓                     | 140°F to 180°F  | ✓        |           | ✓         | ✓         |                        |
| BONDERITE® C-AK 907™      | 772075            | 5 gallon       | ✓           |       | ✓         | ✓                  |              | ✓                     | 140°F to 170°F  | ✓        | ✓         | ✓         | ✓         |                        |
|                           | 594608            | 55 gallon      | ✓           |       | ✓         | ✓                  |              | ✓                     | 140°F to 170°F  | ✓        | ✓         | ✓         | ✓         |                        |
| BONDERITE® C-AK 2192™     | 771826            | 4 kg can       |             | ✓     |           | ✓                  |              |                       | 140°F to 180°F  | ✓        |           | ✓         |           |                        |
|                           | 771825            | 23 kg drum     |             | ✓     |           | ✓                  |              |                       | 140°F to 180°F  | ✓        |           | ✓         |           |                        |
|                           | 593938            | 215 kg drum    |             | ✓     |           | ✓                  |              |                       | 140°F to 180°F  | ✓        |           | ✓         |           |                        |

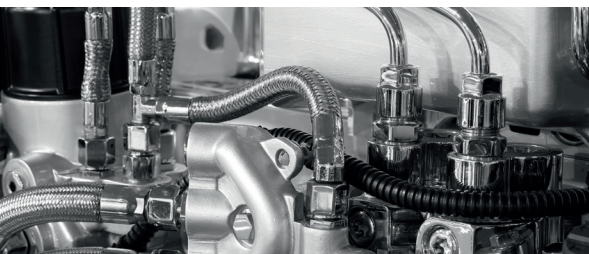
## Neutral Cleaners

| PRODUCTS                | ORDER ITEM NUMBER | CONTAINER SIZE | ORGANIC | OIL SPLITTING | BORATES | PHOSPHATES | OPERATING TEMP. | SPRAY | IMMERSION | FERROUS | ALUMINUM** | COPPER |
|-------------------------|-------------------|----------------|---------|---------------|---------|------------|-----------------|-------|-----------|---------|------------|--------|
| BONDERITE® C-NE 5175™   | 1265826           | 5 gallon       | ✓       | ✓             | ✓       | ✓          | 120°F to 160°F  | ✓     | ✓         | ✓       |            |        |
|                         | 1265623           | 55 gallon      | ✓       | ✓             | ✓       | ✓          | 120°F to 160°F  | ✓     | ✓         | ✓       |            |        |
| BONDERITE® C-NE 5088™   | 597978            | 5 gallon       | ✓       | ✓             |         |            | 120°F to 160°F  | ✓     | ✓         | ✓       | ✓          |        |
|                         | 593241            | 55 gallon      | ✓       | ✓             |         |            | 120°F to 160°F  | ✓     | ✓         | ✓       | ✓          |        |
| BONDERITE® C-NE 5220-1™ | 595321            | 5 gallon       | ✓       | ✓             | ✓       | ✓          | 120°F to 160°F  | ✓     | ✓         | ✓       | ✓          | ✓      |
|                         | 594241            | 55 gallon      | ✓       | ✓             | ✓       | ✓          | 120°F to 160°F  | ✓     | ✓         | ✓       | ✓          | ✓      |

## Acid Pickles

| PRODUCTS                 | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |       |           |                    | OPERATING TEMP.  | CONTENTS        |               |              |
|--------------------------|-------------------|----------------|-------------|-------|-----------|--------------------|------------------|-----------------|---------------|--------------|
|                          |                   |                | LIQUID      | SPRAY | IMMERSION | STEEL / HEAVY DUTY |                  | PHOSPHORIC ACID | GLUCONIC ACID | ORGANIC ACID |
| BONDERITE® C-IC 182A™    | 772225            | 5 gallon       | ✓           | ✓     | ✓         | ✓                  | Ambient to 180°F | ✓               |               |              |
|                          | 594282            | 55 gallon      | ✓           | ✓     | ✓         | ✓                  | Ambient to 180°F | ✓               |               |              |
| BONDERITE® C-IC 182B™    | 772293            | 5 gallon       | ✓           | ✓     | ✓         | ✓                  | Ambient to 180°F | ✓               |               |              |
|                          | 596557            | 55 gallon      | ✓           | ✓     | ✓         | ✓                  | Ambient to 180°F | ✓               |               |              |
| BONDERITE® C-IC NP 7200™ | 1481477           | 5 gallon       | ✓           | ✓     | ✓         | ✓                  | Ambient to 140°F |                 | ✓             |              |
|                          | 1481476           | 55 gallon      | ✓           | ✓     | ✓         | ✓                  | Ambient to 140°F |                 | ✓             |              |
| BONDERITE® C-IC 3012™    | 1902493           | 5 gallon       | ✓           |       | ✓         |                    | 170°F to 190°F   |                 |               | ✓            |
|                          | 1773383           | 55 gallon      | ✓           |       | ✓         |                    | 170°F to 190°F   |                 |               | ✓            |

\* Steel, zinc, aluminum. \*\* Individual alloys should be tested prior to recommendation.



# CLEANING

## Alkaline Paint Strippers (Bases)

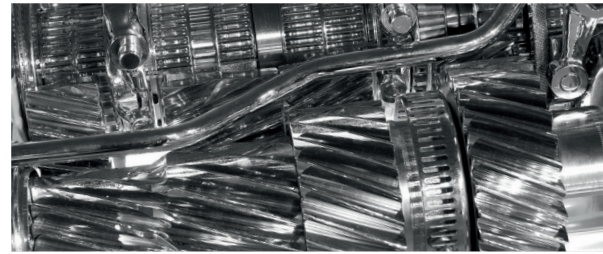
| PRODUCTS                       | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |       | SUBSTRATE |          | TEMPERATURE           |
|--------------------------------|-------------------|----------------|-------------|-------|-----------|----------|-----------------------|
|                                |                   |                | IMMERSION   | SPRAY | STEEL     | ALUMINUM | OPERATING TEMPERATURE |
| <b>BONDERITE® S-ST HOT 50™</b> | 897780            | 5 gallon       | ✓           | ✓     | ✓         |          | 200°F to 240°F        |
|                                | 594431            | 55 gallon      | ✓           | ✓     | ✓         |          | 200°F to 240°F        |
| <b>BONDERITE® C-AK RM 21™</b>  | 1827776           | 5 gallon       | ✓           | ✓     | ✓         |          | 140°F to 210°F        |
|                                | 1827778           | 55 gallon      | ✓           | ✓     | ✓         |          | 140°F to 210°F        |

## Non-Alkaline Paint Strippers

| PRODUCTS                             | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |       | SUBSTRATE |          | TEMPERATURE           |
|--------------------------------------|-------------------|----------------|-------------|-------|-----------|----------|-----------------------|
|                                      |                   |                | IMMERSION   | SPRAY | STEEL     | ALUMINUM | OPERATING TEMPERATURE |
| <b>BONDERITE® S-ST 5668-L™</b>       | 596959            | 55 gallon      | ✓           |       | ✓         | ✓        | 160°F to 180°F        |
| <b>BONDERITE® S-ST 6776™ THIN</b>    | 874894            | 5 gallon       | ✓           |       | ✓         | ✓        | 70°F to 130°F         |
|                                      | 597019            | 55 gallon      | ✓           |       | ✓         | ✓        | 70°F to 130°F         |
| <b>BONDERITE® S-ST 3012MM™ REMAN</b> | 1967701           | 5 gallon       | ✓           |       |           | ✓        | 70°F to 130°F         |
|                                      | 1773382           | 55 gallon      | ✓           |       |           | ✓        | 170°F to 190°F        |

## Paint Stripper Additives

| PRODUCTS                        | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |       | SUBSTRATE |          | TEMPERATURE           |
|---------------------------------|-------------------|----------------|-------------|-------|-----------|----------|-----------------------|
|                                 |                   |                | IMMERSION   | SPRAY | STEEL     | ALUMINUM | OPERATING TEMPERATURE |
| <b>BONDERITE® S-AD HOT 15™</b>  | 967452            | 5 gallon       | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
|                                 | 594246            | 55 gallon      | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
| <b>BONDERITE® S-AD HOT 19™</b>  | 772409            | 5 gallon       | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
|                                 | 772408            | 55 gallon      | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
| <b>BONDERITE® C-NE 0683™</b>    | 1562049           | 5 gallon       | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
|                                 | 1562048           | 55 gallon      | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
| <b>BONDERITE® C-AD SC-78BK™</b> | 594796            | 5 gallon       | ✓           | ✓     | ✓         | ✓        | 140°F to 240°F        |
|                                 | 1083499           | 55 gallon      | ✓           |       | ✓         | ✓        | 140°F to 240°F        |



## Alkaline De-Rusters

|                            |                   |                |                    |                   | APPLICATION |           | METALS |           |               |
|----------------------------|-------------------|----------------|--------------------|-------------------|-------------|-----------|--------|-----------|---------------|
| PRODUCTS                   | ORDER ITEM NUMBER | CONTAINER SIZE | TYPICAL DILUTION   | TEMPERATURE RANGE | SPRAY       | IMMERSION | STEEL  | CAST IRON | NON-FERROUS** |
| BONDERITE®<br>C-AK 75™ DQ  | 594360            | 55 gallon      | 15% - 20%          | 180°F to 210°F    |             | ✓         | ✓      | ✓         |               |
| BONDERITE®<br>C-AK FERLON® | 595784            | 55 gallon      | 1.5 - 2 lb. / gal. | 180°F to 210°F    |             | ✓         | ✓      | ✓         | ✓             |

## Neutral De-Rusters

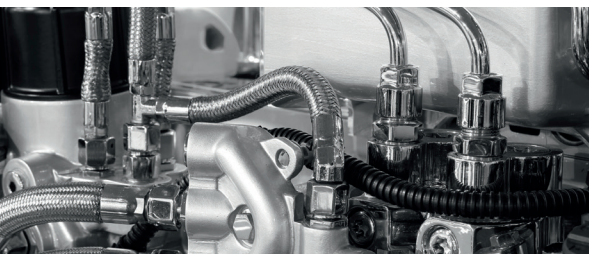
|                             |                   |                |                  |                   | APPLICATION |           | METALS |           |               |
|-----------------------------|-------------------|----------------|------------------|-------------------|-------------|-----------|--------|-----------|---------------|
| PRODUCTS                    | ORDER ITEM NUMBER | CONTAINER SIZE | TYPICAL DILUTION | TEMPERATURE RANGE | SPRAY       | IMMERSION | STEEL  | CAST IRON | NON-FERROUS** |
| BONDERITE®<br>C-NE DR-238G™ | 596606            | 5 gallon       | 5% - 20%         | Ambient to 120°F  |             | ✓         | ✓      | ✓         |               |
|                             | 594291            | 55 gallon      | 5% - 20%         | Ambient to 120°F  |             | ✓         | ✓      | ✓         |               |

## Rust Preventatives

|                          |                   |                |              |          |                  |                       | APPLICATION |           | FILM |     |       | METALS |           |               |
|--------------------------|-------------------|----------------|--------------|----------|------------------|-----------------------|-------------|-----------|------|-----|-------|--------|-----------|---------------|
| PRODUCTS                 | ORDER ITEM NUMBER | CONTAINER SIZE | STORAGE LIFE | % SOLIDS | TYPICAL DILUTION | TYPICAL STORAGE TIME* | SPRAY       | IMMERSION | WAX  | OIL | FLUID | STEEL  | CAST IRON | NON-FERROUS** |
| BONDERITE®<br>L-GP 505™  | 596698            | 5 gallon       | Short-term   | 45       | 3% - 20%         | 4 weeks               | ✓           | ✓         |      |     | ✓     | ✓      | ✓         | ✓             |
|                          | 594827            | 55 gallon      | Short-term   | 45       | 3% - 20%         | 4 weeks               | ✓           | ✓         |      |     | ✓     | ✓      | ✓         | ✓             |
| BONDERITE®<br>L-GP 4232™ | 595511            | 5 gallon       | Short-term   | 35       | 3% - 20%         | 4 weeks               | ✓           | ✓         |      |     | ✓     | ✓      | ✓         | ✓             |
|                          | 594762            | 55 gallon      | Short-term   | 35       | 3% - 20%         | 4 weeks               | ✓           | ✓         |      |     | ✓     | ✓      | ✓         | ✓             |
| BONDERITE®<br>L-GP 5800™ | 772736            | 5 gallon       | Extended     | 99       | 3% - 20%         | 3 months              | ✓           | ✓         |      | ✓   |       | ✓      | ✓         | ✓             |
|                          | 772735            | 55 gallon      | Extended     | 99       | 3% - 20%         | 3 months              | ✓           | ✓         |      | ✓   |       | ✓      | ✓         | ✓             |
| BONDERITE®<br>L-GP 6767™ | 593229            | 5 gallon       | Extended     | 100      | 3% - 20%         | 3 months              | ✓           | ✓         |      | ✓   |       | ✓      | ✓         | ✓             |
|                          | 595793            | 55 gallon      | Extended     | 100      | 3% - 20%         | 3 months              | ✓           | ✓         |      | ✓   |       | ✓      | ✓         | ✓             |
| BONDERITE®<br>L-GP 4141™ | 879525            | 5 gallon       | Extended     | 10       | 100%             | 6 months              | ✓           | ✓         | ✓    |     |       | ✓      | ✓         | ✓             |
|                          | 879524            | 55 gallon      | Extended     | 10       | 100%             | 6 months              | ✓           | ✓         | ✓    |     |       | ✓      | ✓         | ✓             |
| BONDERITE®<br>S-FN 503™  | 2058076           | 5 gallon       | Short-term   | 16       | 3%-18%           | 4 weeks               | ✓           | ✓         |      |     | ✓     | ✓      | ✓         |               |
|                          | 2058075           | 55 gallon      | Short-term   | 16       | 3%-18%           | 4 weeks               | ✓           | ✓         |      |     | ✓     | ✓      | ✓         |               |

\* Typical storage time will vary, depending upon concentration, environmental conditions and storage.

\*\* Individual alloys should be tested prior to recommendation.



# CLEANING

## Maintenance Cleaners

| PRODUCTS               | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |        | CONCENTRATION (% BY VOLUME) | MILD STEEL ETCH | OPERATING TEMPERATURE | CONTENTS       |                 |             |
|------------------------|-------------------|----------------|-------------|--------|-----------------------------|-----------------|-----------------------|----------------|-----------------|-------------|
|                        |                   |                | SPRAY       | LIQUID |                             |                 |                       | PHOSPHATE-FREE | PHOSPHORIC ACID | CITRIC ACID |
| BONDERITE® C-MC 2235™  | 597788            | 5 gallon       |             | ✓      | 0.5% - 50%                  |                 | Ambient               | ✓              |                 |             |
|                        | 594792            | 55 gallon      |             | ✓      | 0.5% - 50%                  |                 | Ambient               | ✓              |                 |             |
| BONDERITE® C-NE 220WB™ | 772337            | 5 gallon       | ✓           | ✓      | 3% - 5%                     |                 | Ambient               |                |                 |             |
|                        | 598064            | 55 gallon      | ✓           | ✓      | 3% - 5%                     |                 | Ambient               |                |                 |             |
| BONDERITE® C-MC 3000™  | 1371210           | 5 gallon       | ✓           | ✓      | 3% - 5%                     |                 | Ambient               | ✓              |                 |             |
|                        | 1290334           | 55 gallon      | ✓           | ✓      | 3% - 5%                     |                 | Ambient               | ✓              |                 |             |
| BONDERITE® C-MC 2237™  | 1957954           | 5 gallon       | ✓           |        | 5% - 20%                    |                 | 110°F to 140°F        | ✓              |                 | ✓           |
|                        | 1957955           | 55 gallon      | ✓           |        | 5% - 20%                    |                 | 110°F to 140°F        | ✓              |                 | ✓           |
| BONDERITE® C-MC 35014™ | 611375            | 55 gallon      | ✓           | ✓      | 3% - 50%                    |                 | Ambient to 175°F      |                | ✓               |             |
| BONDERITE® C-MC 35050™ | 611514            | 55 gallon      | ✓           | ✓      | 1% - 5%                     |                 | 70°F to 120°F         |                |                 |             |

## Spray Wand Cleaners and Coaters

| PRODUCTS                 | ORDER ITEM NUMBER | CONTAINER SIZE     | APPLICATION |        |           |            | SUBSTRATE |             |         |          |            |                       |
|--------------------------|-------------------|--------------------|-------------|--------|-----------|------------|-----------|-------------|---------|----------|------------|-----------------------|
|                          |                   |                    | SPRAY       | LIQUID | IMMERSION | SPRAY WAND | STEEL     | MULTI-METAL | ORGANIC | FLUORIDE | SURFACTANT | OPERATING TEMPERATURE |
| BONDERITE® M-FE 101™     | 772110            | 5 gallon           | ✓           | ✓      |           | ✓          | ✓         |             | ✓       |          | ✓          | 120°F to 190°F        |
|                          | 594296            | 55 gallon          | ✓           | ✓      |           | ✓          | ✓         |             | ✓       |          | ✓          | 120°F to 190°F        |
| BONDERITE® M-FE 200™     | 772101            | 5 gallon           | ✓           | ✓      |           | ✓          | ✓         | ✓           | ✓       | ✓        | ✓          | 130°F to 190°F        |
|                          | 594643            | 55 gallon          | ✓           | ✓      |           | ✓          | ✓         | ✓           | ✓       | ✓        | ✓          | 130°F to 190°F        |
| BONDERITE® M-FE 330™     | 772145            | 5 gallon           | ✓           | ✓      |           | ✓          |           | Al only     |         | ✓        | ✓          | Ambient to 120°F      |
|                          | 595382            | 55 gallon          | ✓           | ✓      |           | ✓          |           | Al only     |         | ✓        | ✓          | Ambient to 120°F      |
| BONDERITE® M-FE 10100™   | 1957405           | 5 gallon           | ✓           | ✓      |           | ✓          | ✓         |             |         |          |            | 140°F to 170°F        |
|                          | 1957404           | 55 gallon          | ✓           | ✓      |           | ✓          | ✓         |             |         |          |            | 140°F to 170°F        |
| BONDERITE® M-ZN 5™       | 594335            | 4 1-gallon bottles |             | ✓      |           | Brush on   |           | Galvanized  |         |          |            | Ambient to 120°F      |
| BONDERITE® C-IC 79™ AERO | 594305            | 4 1-gallon bottles | ✓           | ✓      | ✓         | ✓          |           | Galvanized  |         |          |            | Ambient to 120°F      |
| BONDERITE® C-IC 33™ AERO | 592770            | 55 gallon          | ✓           | ✓      | ✓         | ✓          |           | Al only     |         | ✓        |            | Ambient to 120°F      |
| BONDERITE® M-NT 600SW™   | 1920947           | 5 gallon           | ✓           | ✓      |           | ✓          | ✓         | ✓           |         | ✓        | ✓          | 100°F to 140°F        |
|                          | 1920946           | 55 gallon          | ✓           | ✓      |           | ✓          | ✓         | ✓           |         | ✓        | ✓          | 100°F to 140°F        |



## Cleaner and Treatment Wipes

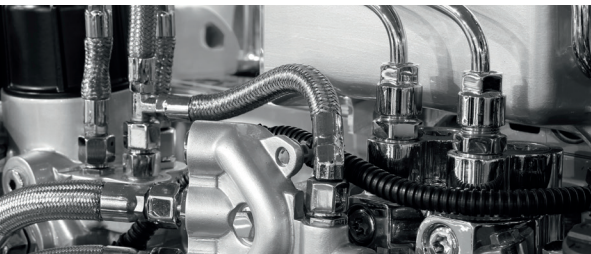
| PRODUCTS                           | ORDER ITEM NUMBER | CONTAINER SIZE                             | STEEL | ZINC | ALUMINUM | MAGNESIUM | CRYSTAL TYPE | TEMPERATURE RANGE | REACTIVE | DRY-IN-PLACE | NON-CHLORINE | MILITARY APPROVALS | GENERAL SOIL CLEANUP | VOCs OR HAPS |
|------------------------------------|-------------------|--------------------------------------------|-------|------|----------|-----------|--------------|-------------------|----------|--------------|--------------|--------------------|----------------------|--------------|
| <b>BONDERITE® 1455-W™ WIPES</b>    | 1545630           | Case of 6 canisters, 25 wipes per canister | ✓     | ✓    |          |           | Nano         | Ambient           | ✓        | ✓            | ✓            |                    |                      | < 1 %        |
| <b>BONDERITE® M-NT 5700™ WIPES</b> | 869854            | Case of 5 bags, 50 wipes per bag           |       |      | ✓        | ✓         | Nano         | Ambient           | ✓        | ✓            | ✓            |                    |                      | < 1 %        |
| <b>BONDERITE® C-SO 263™ WIPES</b>  | 598224            | Case of 20 bags, 30 wipes per bag          |       |      |          |           | Cleaner      | Ambient           | ✓        | ✓            | ✓            |                    | ✓                    | None         |

## Metal Surface Cleaners and Coaters

| PRODUCTS                      | ORDER ITEM NUMBER | CONTAINER SIZE | APPLICATION |        |           |            | SUBSTRATE |             |         |          |            |                       |
|-------------------------------|-------------------|----------------|-------------|--------|-----------|------------|-----------|-------------|---------|----------|------------|-----------------------|
|                               |                   |                | SPRAY       | LIQUID | IMMERSION | SPRAY WAND | STEEL     | MULTI-METAL | ORGANIC | FLUORIDE | SURFACTANT | OPERATING TEMPERATURE |
| <b>BONDERITE® M-FE 500LT™</b> | 771987            | 5 gallon       | ✓           | ✓      | ✓         | ✓          | ✓         |             |         |          | ✓          | 70°F to 140°F         |
|                               | 593944            | 55 gallon      | ✓           | ✓      | ✓         | ✓          | ✓         |             |         |          | ✓          | 70°F to 140°F         |
| <b>BONDERITE® M-FE 700™</b>   | 772086            | 5 gallon       | ✓           | ✓      | ✓         | ✓          | ✓         | ✓           | ✓       | ✓        | ✓          | 110°F to 150°F        |
|                               | 594268            | 55 gallon      | ✓           | ✓      | ✓         | ✓          | ✓         | ✓           | ✓       | ✓        | ✓          | 110°F to 150°F        |

## Nanoceramic Pretreatments

| PRODUCTS                     | ORDER ITEM NUMBER | CONTAINER SIZE | SPRAY | IMMERSION | STEEL | ZINC | ALUMINUM | MAGNESIUM | TEMPERATURE RANGE | REACTIVE | NON-CHROME |
|------------------------------|-------------------|----------------|-------|-----------|-------|------|----------|-----------|-------------------|----------|------------|
| <b>BONDERITE® M-NT-1™</b>    | 772427            | 5 gallon       | ✓     | ✓         | ✓     | ✓    | ✓        |           | 55°F to 120°F     | ✓        | ✓          |
|                              | 611359            | 55 gallon      | ✓     | ✓         | ✓     | ✓    | ✓        |           | 55°F to 100°F     | ✓        | ✓          |
| <b>BONDERITE® M-NT 7400™</b> | 599060            | 5 gallon       | ✓     | ✓         | ✓     | ✓    | ✓        |           | Ambient           | ✓        | ✓          |
|                              | 597816            | 55 gallon      | ✓     | ✓         | ✓     | ✓    | ✓        |           | Ambient           | ✓        | ✓          |
| <b>BONDERITE® M-NT 5700™</b> | 595996            | 5 gallon       | ✓     | ✓         |       |      | ✓        | ✓         | 70°F to 100°F     | ✓        | ✓          |
|                              | 592968            | 15 gallon      | ✓     | ✓         |       |      | ✓        | ✓         | 70°F to 100°F     | ✓        | ✓          |
|                              | 594136            | 55 gallon      | ✓     | ✓         |       |      | ✓        | ✓         | 70°F to 100°F     | ✓        | ✓          |

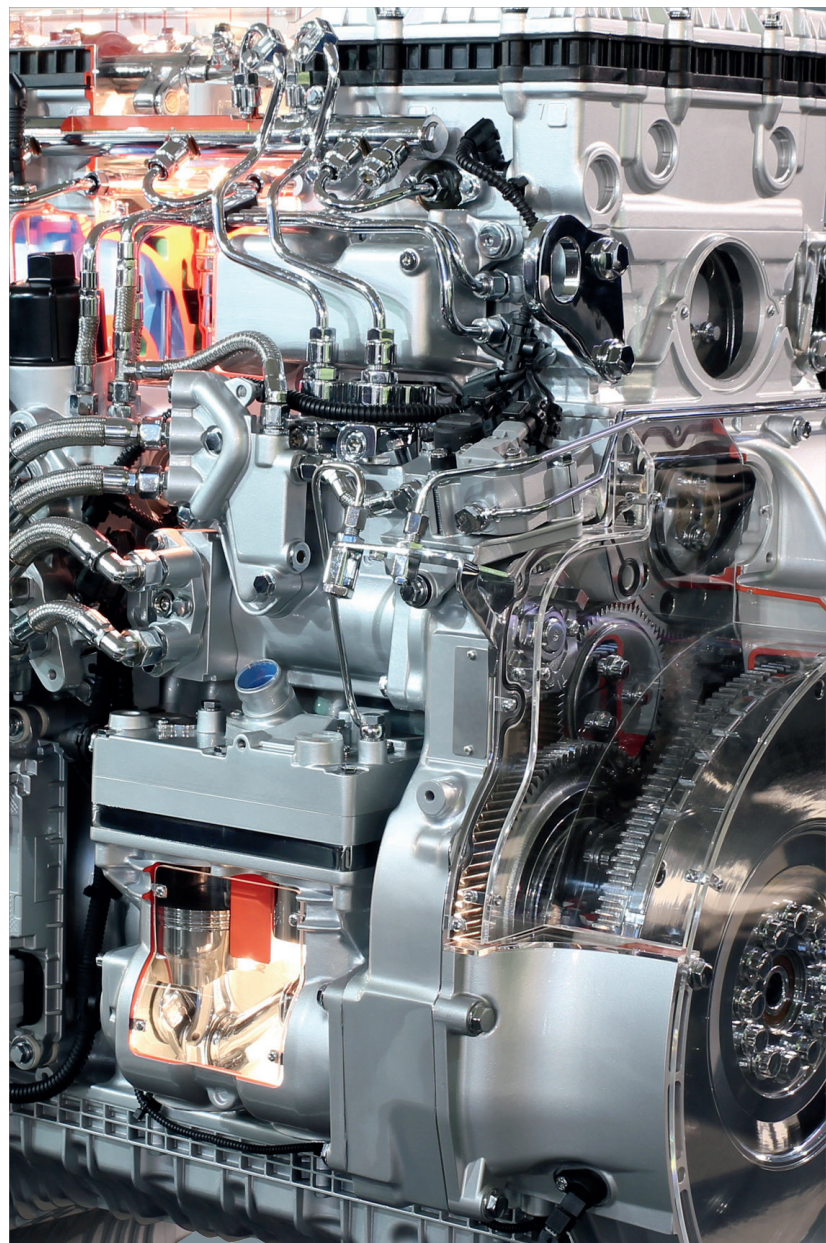


# REMACHINING

## MACHINING LUBRICANTS AND COOLANTS METAL REMOVAL AND FORMING

Henkel offers a full line of metalworking fluids designed to extend tool life, reduce waste, improve quality, and increase throughput. From straight oils to synthetics, our products for metal forming, metal removal and rust prevention contain necessary additives that meet the needs of light- to heavy-duty industry applications.

BONDERITE® branded products are synonymous with metal removal and forming lubricants. From liquids to pastes, these water-miscible and non-water-miscible products are used in manual and automated application systems. BONDERITE® branded products are available in fully synthetic, semi-synthetic, soluble or straight oil formulations.



REMACHINING

REMOUNTING



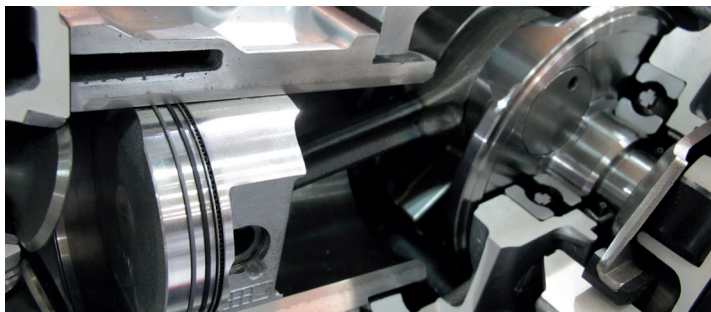
## Metal Removal

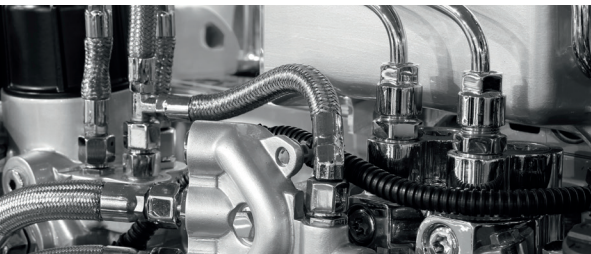
| PRODUCTS                      | ORDER ITEM NUMBER | CONTAINER WEIGHT (kg) | CONTAINER SIZE | CONCENTRATE COLOR | RUST-FREE CONC. (%) – CAST IRON | VISCOSITY - H <sub>2</sub> O SOLUBLES (cP), OILS (SUS @ 100°F) | OIL CONTENT RANGE (%) | TYPICAL CONCENTRATION | SUBSTRATES |           |           |                         |                      |
|-------------------------------|-------------------|-----------------------|----------------|-------------------|---------------------------------|----------------------------------------------------------------|-----------------------|-----------------------|------------|-----------|-----------|-------------------------|----------------------|
|                               |                   |                       |                |                   |                                 |                                                                |                       |                       | STEEL      | CAST IRON | ALUMINUM* | YELLOW (COPPER / BRASS) | PHOSPHOROUS ADDITIVE |
| <b>BONDERITE® L-MR 9103™</b>  | 596262            | 20                    | Pail           | Blue              | 3                               | N/A                                                            | 0                     | 5% - 10%              | ✓          | ✓         |           |                         |                      |
|                               | 593832            | 213                   | Drum           |                   |                                 |                                                                |                       |                       |            |           |           |                         |                      |
| <b>BONDERITE® L-MR B-400™</b> | 706695            | 18                    | Pail           | Amber             | N/A                             | N/A                                                            | N/A                   | 5% - 10%              | ✓          | ✓         | ✓         | ✓                       |                      |
|                               | 677532            | 197                   | Drum           |                   |                                 |                                                                |                       |                       |            |           |           |                         |                      |
| <b>BONDERITE® L-MR 2140™</b>  | 594451            | 18                    | Pail           | Amber             | N/A                             | 160                                                            | 50 - 55               | 5% - 10%              | ✓          | ✓         | ✓         |                         |                      |
|                               |                   | 191                   | Drum           |                   |                                 |                                                                |                       |                       |            |           |           |                         |                      |
| <b>BONDERITE® L-MR CR 67™</b> | 594274            | 14                    | Pail           | Amber             | N/A                             | 85                                                             | 90 - 95               | 100%                  | ✓          | ✓         | ✓         | ✓                       | ✓                    |
|                               | 594463            | 177                   | Drum           |                   |                                 |                                                                |                       |                       |            |           |           |                         |                      |

## Metal Forming

| PRODUCTS                         | ORDER ITEM NUMBER | CONTAINER WEIGHT (kg) | CONTAINER SIZE | CONCENTRATE COLOR | VISCOSITY - H <sub>2</sub> O SOLUBLES (cP), OILS (SUS @ 100°F) | TYPICAL CONCENTRATION | SUBSTRATES |           |                         |                         |                 | EP ADDITIVES |         |
|----------------------------------|-------------------|-----------------------|----------------|-------------------|----------------------------------------------------------------|-----------------------|------------|-----------|-------------------------|-------------------------|-----------------|--------------|---------|
|                                  |                   |                       |                |                   |                                                                |                       | STEEL      | ALUMINUM* | YELLOW (COPPER / BRASS) | GALVANIZED / ZINC ALLOY | STAINLESS STEEL | CHLORINE     | SULPHUR |
| <b>BONDERITE® L-FM F 750™</b>    | 596044            | 18                    | Pail           | Yellow            | 120                                                            | 20% - 100%            | ✓          | ✓         | ✓                       | ✓                       | ✓               |              |         |
|                                  | 595446            | 209                   | Drum           |                   |                                                                |                       |            |           |                         |                         |                 |              |         |
| <b>BONDERITE® L-FM F 927 KW™</b> | 594263            | 19                    | Pail           | Amber             | N/A                                                            | 10% - 100%            | ✓          | ✓         | ✓                       | ✓                       | ✓               | ✓            |         |
|                                  | 595294            | 204                   | Drum           |                   |                                                                |                       |            |           |                         |                         |                 |              |         |
| <b>BONDERITE® L-FM PL 298™</b>   | 928486            | 15                    | Pail           | Amber             | 250                                                            | 100%                  | ✓          | ✓         | ✓                       | ✓                       | ✓               |              | ✓       |
|                                  | 928485            | 181                   | Drum           |                   |                                                                |                       |            |           |                         |                         |                 |              |         |

\* Individual alloys should be tested prior to recommendation.



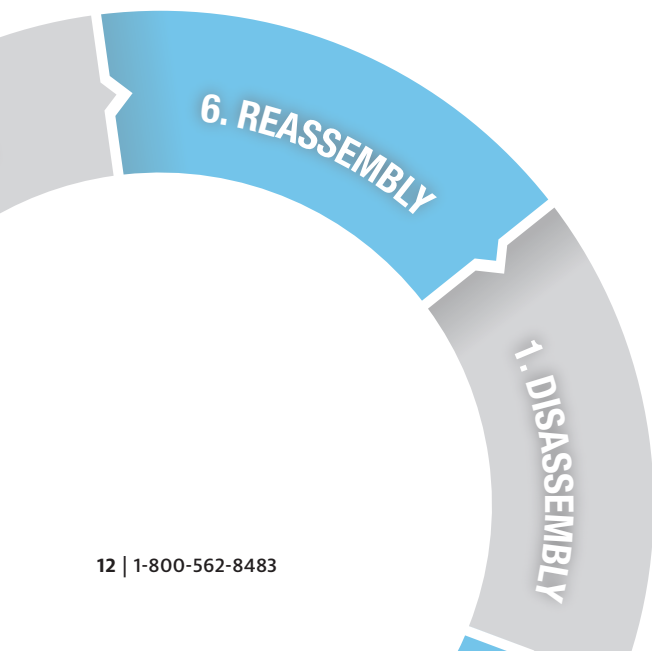


# REASSEMBLY

## THREADLOCKING, SEALING, RETAINING, GASKETING, LUBRICATING AND REPAIRING WITH LOCTITE® PRODUCTS

Henkel's LOCTITE® brand offers an extensive line of high performance adhesives, sealants, and dispensing/curing systems – all available from a single supplier. LOCTITE® products are used to build everything from automobiles to dishwashers to tractors – and the trucks that deliver them. LOCTITE® products help make these machines and sub-assemblies less expensive, more reliable and longer lasting.

Many LOCTITE® products are already specified in production by the world's leading original equipment manufacturers in every industry and every region around the world. Whatever your adhesive or sealant needs may be – threadlocking, thread sealing, retaining, gasketing, lubricating or repairing – chances are LOCTITE® has the product solution that is right for your application and budget. In addition, Henkel provides research and development, unmatched customer service, expert technical support, professional product training and outstanding field sales assistance.





## LOCTITE® Anaerobic Gasketing Products

| PRODUCTS                             | ORDER ITEM NUMBER       | PACKAGE TYPE / SIZE                                  | COLOR | TYPICAL USE                                           | GAP FILL (INCHES)                  | CURED STATE   | VISCOSITY (cP)*                    | TEMPERATURE RANGE                  | CURE SPEED                                            | RECOMMENDED PRIMER             | SPECIFIC GRAVITY | AGENCY APPROVALS           |
|--------------------------------------|-------------------------|------------------------------------------------------|-------|-------------------------------------------------------|------------------------------------|---------------|------------------------------------|------------------------------------|-------------------------------------------------------|--------------------------------|------------------|----------------------------|
| <b>LOCTITE® 510™ FLANGE SEALANT</b>  | 51031<br>51041<br>51074 | 50 ml tube<br>250 ml tube<br>300 ml cartridge        | Red   | High temp. applications, excellent solvent resistance | Unprimed – 0.010<br>Primed – 0.020 | Rigid         | 90,000 / 500,000<br>Thixotropic    | -65°F to 400°F<br>(-54°C to 204°C) | Unprimed – 4 to 24 hrs.<br>Primed – 30 min. to 4 hrs. | SF 7088™, SF 7471™ or SF 7649™ | 1.16             | N/A                        |
| <b>LOCTITE® 518™ FLANGE SEALANT</b>  | 22424<br>51831<br>51845 | 300 ml syringe kit<br>50 ml tube<br>300 ml cartridge | Red   | For all metals, including aluminum flanges            | Unprimed – 0.010<br>Primed – 0.050 | Flexible      | 800,000 / 3,750,000<br>Thixotropic | -65°F to 300°F<br>(-54°C to 149°C) | Unprimed – 4 to 24 hrs.<br>Primed – 30 min. to 4 hrs. | SF 7088™, SF 7471™ or SF 7649™ | 1.13             | NSF / ANSI 61, CFIA Listed |
| <b>LOCTITE® 5128™ FLANGE SEALANT</b> | 1864475                 | 300 ml cartridge                                     | Red   | For all metals, including aluminum flanges            | Unprimed – 0.010<br>Primed – 0.020 | Semi-flexible | 10,000 / 50,000<br>Thixotropic     | -65°F to 300°F<br>(-54°C to 149°C) | Unprimed – 4 to 24 hrs.<br>Primed – 30 min. to 4 hrs. | SF 7088™, SF 7471™ or SF 7649™ | 1.10             | N/A                        |

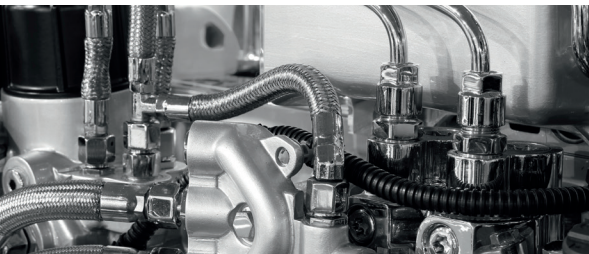
\* NOTE: Different test methods were used. Please see SDS, or consult with Henkel Engineering for test specifications.

## LOCTITE® Anaerobic Products for Sealing / Dressing Existing Gaskets

| PRODUCTS                                     | ORDER ITEM NUMBER | PACKAGE TYPE / SIZE | COLOR  | TYPICAL USE              | CONSISTENCY | VISCOSITY (cP) | TEMPERATURE RANGE                  | CURE SPEED       | OIL RESISTANCE | AGENCY APPROVALS |
|----------------------------------------------|-------------------|---------------------|--------|--------------------------|-------------|----------------|------------------------------------|------------------|----------------|------------------|
| <b>LOCTITE® 534™ HI-TACK GASKET DRESSING</b> | 39156             | 19 g stick          | Purple | Vertical, repositionable | Semisolid   | N/A            | -65°F to 300°F<br>(-54°C to 149°C) | 5 minutes to set | Oil resistant  | N/A              |

## LOCTITE® Silicone Gasketing Products

| PRODUCTS                                                                  | ORDER ITEM NUMBER                              | PACKAGE TYPE / SIZE                                                         | COLOR | CONSISTENCY | OIL RESISTANCE           | TEMPERATURE RANGE (INTERMITTENT)   | SEALING TIME                                   | AGENCY APPROVALS         |
|---------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------------------------------------|-------|-------------|--------------------------|------------------------------------|------------------------------------------------|--------------------------|
| <b>LOCTITE® SI 587™ BLUE, HIGH PERFORMANCE RTV SILICONE GASKET MAKER</b>  | 58730<br>58775<br>58791<br>40462               | 70 ml tube<br>300 ml cartridge<br>50 lb. pail<br>190 ml can                 | Blue  | Paste       | Increased oil resistance | -75°F to 500°F<br>(-59°C to 260°C) | Tack-free – 30 min.<br>Full strength – 24 hrs. | NSF P1, CFIA Listed, ABS |
| <b>LOCTITE® SI 5900®</b>                                                  | 20166                                          | 300 ml cartridge                                                            | Black | Paste       | Oil / water resistant    | -65°F to 500°F<br>(-54°C to 260°C) | Tack-free – 30 min.<br>Full strength – 24 hrs. | NSF P1, CFIA Listed      |
| <b>LOCTITE® SI 5699™ GREY, HIGH PERFORMANCE RTV SILICONE GASKET MAKER</b> | 135275<br>135270<br>230074<br>229770<br>756302 | 70 ml tube<br>300 ml cartridge<br>50 lb. pail<br>550 lb. drum<br>190 ml can | Grey  | Paste       | Increased oil resistance | -75°F to 625°F<br>(-59°C to 329°C) | Tack-free – 30 min.<br>Full strength – 24 hrs. | CFIA Listed              |



# REASSEMBLY

## LOCTITE® General-Purpose Threadlocking Products

|                 | KEY FEATURES    | PRODUCT                                           | TYPICAL USE                                                                 | ORDER ITEM NUMBER             | PACKAGE TYPE & SIZE                             | COLOR  | VISCOSITY** (cP)             | TORQUE*** IN.-LBS. (Break/Prevail) | TEMPERATURE RANGE | CURE SPEED (STEEL AT 25°C)          | AGENCY APPROVALS                                                                  |
|-----------------|-----------------|---------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------|-------------------------------------------------|--------|------------------------------|------------------------------------|-------------------|-------------------------------------|-----------------------------------------------------------------------------------|
| Low Strength    | Small Fasteners | <b>LOCTITE® 222™ THREADLOCKER</b>                 | Small screws under 1/4 in.                                                  | 21463<br>21464                | 10 ml bottle<br>50 ml bottle                    | Purple | 1,200 / 5,000<br>Thixotropic | 53 / 30                            | -65°F to 300°F    | Fixture – 20 min.<br>Full – 24 hrs. | N/A                                                                               |
|                 | General-Purpose | <b>LOCTITE® 243™ BLUE THREADLOCKER</b>            | 1/4 in. to 3/4 in. bolts with light oil contamination                       | 1329467<br>1329505<br>1330333 | 50 ml bottle<br>250 ml bottle<br>1 liter bottle | Blue   | 1,300 / 3,000<br>Thixotropic | 230 / 40                           | -65°F to 360°F    | Fixture – 10 min.<br>Full – 24 hrs. | NSF/ANSI 61, CFIA Listed                                                          |
| Medium Strength | Semisolid Stick | <b>LOCTITE® 248™ BLUE THREADLOCKER</b>            | 1/4 in. to 3/4 in. bolts, overhead, pre-dispensed, hard-to-reach areas      | 37684<br>37087                | 9 g stick<br>19 g stick                         | Blue   | Semisolid                    | 110* / 43                          | -65°F to 300°F    | Fixture – 5 min.<br>Full – 24 hrs.  | CFIA Listed                                                                       |
|                 | Tape            | <b>LOCTITE® 249™ BLUE THREADLOCKER TAPE</b>       | 1/4 in. to 3/4 in. bolts, overhead, pre-dispensed, hard-to-reach areas      | 1372603                       | 260 in. roll                                    | Blue   | Tape                         | 74 / 47                            | -65°F to 300°F    | Fixture – 30 min.<br>Full – 24 hrs. | CFIA Listed                                                                       |
| High Strength   | General-Purpose | <b>LOCTITE® 263™ HIGH STRENGTH THREADLOCKER</b>   | Primerless, high strength                                                   | 1330585<br>1330335<br>1330334 | 50 ml bottle<br>250 ml bottle<br>1 liter bottle | Red    | 400 / 600                    | 290 / 290*                         | -65°F to 360°F    | Fixture – 10 min.<br>Full – 24 hrs. | NSF/ANSI 61, CFIA Listed                                                          |
|                 | Semisolid Stick | <b>LOCTITE® 268™ THREADLOCKER – HIGH STRENGTH</b> | Up to 3/4 in. bolts, overhead, pre-dispensed, hard-to-reach areas           | 37685<br>37686                | 9 g stick<br>19 g stick                         | Red    | Semisolid                    | 220* / 34                          | -65°F to 300°F    | Fixture – 5 min.<br>Full – 24 hrs.  | CFIA Listed                                                                       |
| Wicking Grade   | General-Purpose | <b>LOCTITE® 290™ THREADLOCKER</b>                 | Medium/high strength, wicking grade for preassembled parts and weld sealing | 29031<br>29041<br>29043       | 50 ml bottle<br>250 ml bottle<br>1 liter bottle | Green  | 25 / 55                      | 90 / 260                           | -65°F to 300°F    | Fixture – 20 min.<br>Full – 24 hrs. | MIL-S-46163A for existing designs, ASTM D-5363†, NSF/ANSI 61, NSF P1, CFIA Listed |

\* Break loose value.

\*\* Brookfield RVT spindle 3.20 RPM/25 RPM.

\*\*\* M10 steel nuts and bolts.

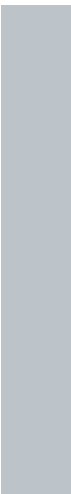
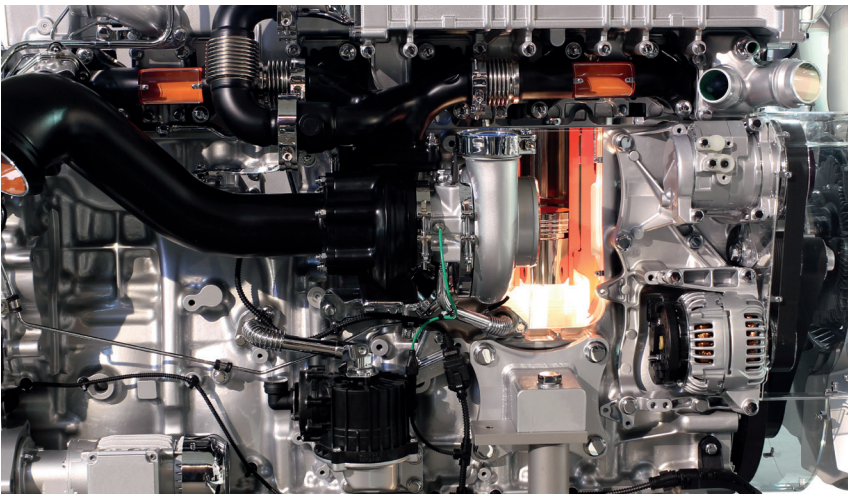
† For new designs.

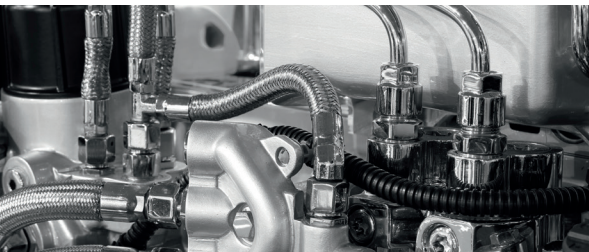


LOCTITE® Specialty Threadlocking Products

|                 | KEY FEATURES             | PRODUCT                        | TYPICAL USE                   | ITEM NUMBER             | PACKAGE TYPE & SIZE                             | COLOR | VISCOSITY* (cP)      | TORQUE** IN.-LBS. (Break / Prevail) | TEMPERATURE RANGE | CURE SPEED (STEEL AT 25°C)         | AGENCY APPROVALS |
|-----------------|--------------------------|--------------------------------|-------------------------------|-------------------------|-------------------------------------------------|-------|----------------------|-------------------------------------|-------------------|------------------------------------|------------------|
| High Strength   | High Temperature         | LOCTITE® 272™ THREADLOCKER     | High temperature applications | 27240<br>27270<br>27285 | 50 ml bottle<br>250 ml bottle<br>1 liter bottle | Red   | 9,500                | 200 / 220                           | -65°F to 450°F    | Fixture – 1 hr.<br>Full – 24 hrs.  | CFIA Listed      |
|                 | Enhanced Health & Safety | LOCTITE® 2700 NA™ THREADLOCKER | High strength                 | 1526123<br>1526565      | 50 ml bottle<br>250 ml bottle                   | Red   | 5,000<br>Thixotropic | 300 / 265                           | -65°F to 300°F    | Fixture – 5 min.<br>Full – 24 hrs. | N/A              |
| Medium Strength | Enhanced Health & Safety | LOCTITE® 2400 NA™ THREADLOCKER | General-purpose               | 1526121<br>1526122      | 50 ml bottle<br>250 ml bottle                   | Blue  | 3,070<br>Thixotropic | 160 / 20                            | -65°F to 300°F    | Fixture – 5 min.<br>Full – 24 hrs. | N/A              |

\* Brookfield RVT spindle 3.20 RPM/25 RPM.  
\*\* M10 steel nuts and bolts.



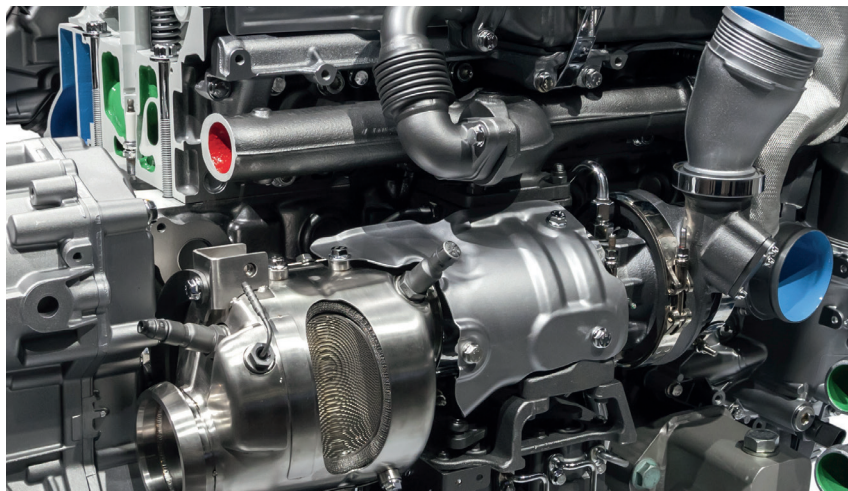


# REASSEMBLY

## LOCTITE® Retaining Compounds

| PRODUCT                                 | ORDER ITEM NUMBER       | PACKAGE TYPE / SIZE                             | TYPICAL USE                                                               | COLOR  | MAXIMUM GAP FILL (DIAMETER-INCHES) | VISCOSITY (cP)                  | SHEAR STRENGTH STEEL / STEEL * (psi) | TEMPERATURE RANGE               | CURE SPEED*                         | RECOMMENDED PRIMER             | SPECIFIC GRAVITY | AGENCY APPROVALS |
|-----------------------------------------|-------------------------|-------------------------------------------------|---------------------------------------------------------------------------|--------|------------------------------------|---------------------------------|--------------------------------------|---------------------------------|-------------------------------------|--------------------------------|------------------|------------------|
| <b>LOCTITE® 540™ RETAINING COMPOUND</b> | 54041                   | 250 ml tube                                     | Cup / core plug adhesive sealant                                          | Blue   | N/A                                | 7,000 to 12,000                 | 2,030                                | -65°F to 300°F (-54°C to 149°C) | N/A                                 | SF 7649™ or SF 7471™           | N/A              | N/A              |
| <b>LOCTITE® 603™ RETAINING COMPOUND</b> | 21441<br>21442          | 50 ml bottle<br>250 ml bottle                   | For close-fitting parts with light contamination                          | Green  | 0.005 in.                          | 125                             | 3,770                                | -65°F to 300°F (-54°C to 149°C) | Fixture – 10 min.<br>Full – 24 hrs. | SF 7088™, SF 7649™ or SF 7471™ | 1.10             | N/A              |
| <b>LOCTITE® 620™ RETAINING COMPOUND</b> | 62040<br>62070<br>62085 | 50 ml bottle<br>250 ml bottle<br>1 liter bottle | For high temperature applications                                         | Green  | 0.015 in.                          | 8,500                           | 3,800                                | -65°F to 450°F (-54°C to 232°C) | Fixture – 1 hr.<br>Full – 24 hrs.   | SF 7088™, SF 7649™ or SF 7471™ | 1.16             | CFIA Listed, ABS |
| <b>LOCTITE® 648™ RETAINING COMPOUND</b> | 21444<br>21445          | 50 ml bottle<br>250 ml bottle                   | Fast fixturing for close-fitting parts, high strength for stainless steel | Green  | 0.006 in.                          | 500                             | 3,900                                | -65°F to 300°F (-54°C to 149°C) | Fixture – 5 min.<br>Full – 24 hrs.  | SF 7088™, SF 7649™ or SF 7471™ | 1.13             | N/A              |
| <b>LOCTITE® 660™ RETAINING COMPOUND</b> | 66040                   | 50 ml tube                                      | For repair of worn machinery parts                                        | Silver | 0.020 in.                          | 250,000 / 1,500,000 Thixotropic | 3,335                                | -65°F to 300°F (-54°C to 149°C) | Fixture – 20 min.<br>Full – 24 hrs. | SF 7088™, SF 7649™ or SF 7471™ | 1.13             | CFIA Listed      |
| <b>LOCTITE® 668™ RETAINING COMPOUND</b> | 39148                   | 19 g stick                                      | Bonding of cylindrical fitting parts                                      | Green  | 0.005 in.                          | Semisolid                       | 2,610                                | -65°F to 400°F (-54°C to 204°C) | Fixture – 30 min.<br>Full – 72 hrs. | SF 7649™ or SF 7471™           | 1.1228           | N/A              |

\*Varies with substrates.



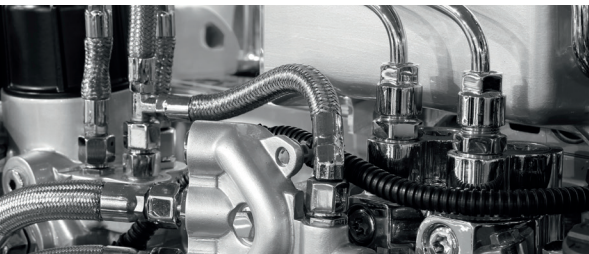


## LOCTITE® Liquid Anaerobic Thread Sealing Products

|                       | PRODUCT                             | ORDER ITEM NUMBER                         | PACKAGE TYPE & SIZE                                                                | TYPICAL USE                                      | COLOR & APPEARANCE | VISCOSITY (cP) | TEMPERATURE RANGE               | PRESSURE RESISTANCE (psi) | RECOMMENDED PRIMER             | AGENCY APPROVALS                                                                                 |
|-----------------------|-------------------------------------|-------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------|--------------------|----------------|---------------------------------|---------------------------|--------------------------------|--------------------------------------------------------------------------------------------------|
| GENERAL-PURPOSE       | <b>LOCTITE® 561™ PIPE SEALANT</b>   | 37127                                     | 19 g stick                                                                         | General-purpose, portable, overhead              | White Paste        | Semisolid      | -65°F to 300°F (-54°C to 149°C) | 10,000                    | SF 7088™, SF 7649™ or SF 7471™ | UL Classified for U.S., CFIA Listed, NSF / ANSI 61                                               |
|                       | <b>LOCTITE® 565™ THREAD SEALANT</b> | 56531<br>56541<br>56571<br>56543<br>56566 | 50 ml tube<br>250 ml tube<br>300 ml cartridge<br>1 liter bottle<br>10 liter bottle | Controlled strength                              | White              | 300,000        | -65°F to 300°F (-54°C to 149°C) | 10,000                    | SF 7088™, SF 7649™ or SF 7471™ | CSA International, UL Classified for U.S., NSF / ANSI 61, CFIA Listed, ULC Classified for Canada |
| HIGH TEMPERATURE      | <b>LOCTITE® 567™ THREAD SEALANT</b> | 56747<br>56765<br>33241<br>56790          | 50 ml tube<br>250 ml tube<br>350 ml brush-top can<br>1 liter bottle                | For stainless steel and all other metal fittings | White              | 540,000        | -65°F to 400°F (-54°C to 204°C) | 10,000                    | SF 7088™, SF 7649™ or SF 7471™ | UL Classified for U.S., ABS, CFIA Listed, NSF / ANSI 61, ULC Classified for Canada               |
| HYDRAULIC & PNEUMATIC | <b>LOCTITE® 545™ THREAD SEALANT</b> | 54531<br>54541                            | 50 ml bottle<br>250 ml bottle                                                      | Pneumatic hydraulic sealant, no fillers          | Purple             | 14,000         | -65°F to 300°F (-54°C to 149°C) | 10,000                    | SF 7088™, SF 7649™ or SF 7471™ | ABS, CFIA Listed                                                                                 |

## LOCTITE® Primers

| PRODUCT                         | ORDER ITEM NUMBER       | PACKAGE TYPE & SIZE                                                     | COLOR         | VISCOSITY (cP) | BASE                  | ON-PART LIFE | DRY TIME         | APPLICATION | AGENCY APPROVALS                                                                                   |
|---------------------------------|-------------------------|-------------------------------------------------------------------------|---------------|----------------|-----------------------|--------------|------------------|-------------|----------------------------------------------------------------------------------------------------|
| <b>LOCTITE® SF 7088™ PRIMER</b> | 1069258                 | 17 g stick                                                              | Teal          | Semisolid      | No solvent            | 30 days      | None             | Anaerobics  | N/A                                                                                                |
| <b>LOCTITE® SF 7471™ PRIMER</b> | 22477<br>19268          | 4.5 oz. net wt. aerosol can<br>1 gallon can                             | Amber         | 2              | Acetone / Isopropanol | 7 days       | 30 to 70 seconds | Anaerobics  | MIL-S-22473E for existing designs, ASTM D-5363 for new designs                                     |
| <b>LOCTITE® SF 7649™ PRIMER</b> | 21347<br>21348<br>19266 | 25 g net wt. aerosol can<br>4.5 oz. net wt. aerosol can<br>1 gallon can | Clear / Green | 2              | Acetone               | 30 days      | 30 to 70 seconds | Anaerobics  | MIL-S-22473E for existing designs, ASTM D-5363 for new designs, NSF / ANSI 61, NSF P1, CFIA Listed |



# REASSEMBLY

## LOCTITE® Synthetic Greases

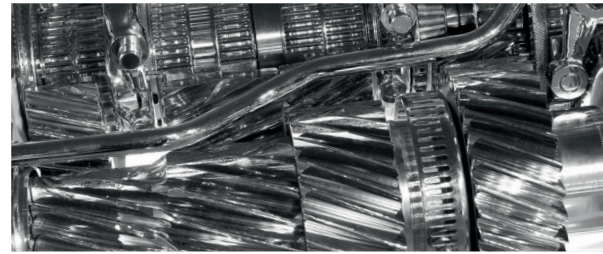
| PRODUCT                                                    | ORDER ITEM NUMBER                | PACKAGE TYPE & SIZE                                          | TEMPERATURE RESISTANCE                                 | TYPE OF LUBRICANT                             | FOUR BALL TEST        | NLGI RATING | DROP POINT                          | AGENCY APPROVALS    |
|------------------------------------------------------------|----------------------------------|--------------------------------------------------------------|--------------------------------------------------------|-----------------------------------------------|-----------------------|-------------|-------------------------------------|---------------------|
| <b>LOCTITE® LB 8034™ HIGH PERFORMANCE SYNTHETIC GREASE</b> | 36782<br>36783<br>37061<br>37710 | 14 oz. cartridge<br>400 g can<br>30 lb. pail<br>120 lb. drum | 400°F (204°C) continuous<br>500°F (260°C) intermittent | Synthetic hydrocarbon (polyalphaolefin-based) | 0.45 mm (ASTM D 2266) | 2           | 500°F (260°C) (ASTM D 556)          | NSF H1, CFIA Listed |
| <b>LOCTITE® LB 8108™ HIGH PERFORMANCE SYNTHETIC GREASE</b> | 1906102                          | 10.1 oz. net wt. aerosol                                     | 420°F (216°C) continuous<br>520°F (271°C) intermittent | Synthetic hydrocarbon (polyalphaolefin-based) | 0.42 mm (ASTM D 2266) | 2           | 600°F (319°C) (ASTM D 556 ISO 2176) | NSF H1, CFIA Listed |

\* CST at 104°F (40°C).

## LOCTITE® Anti-Seize Products

| PRODUCT                                                                                 | ORDER ITEM NUMBER | PACKAGE TYPE & SIZE                         | COLOR  | TEMPERATURE RANGE                 | BASE OIL                    | VISCOSITY | SOLID LUBRICATING AGENT    | TORQUE COEFFICIENT* | METAL-FREE |
|-----------------------------------------------------------------------------------------|-------------------|---------------------------------------------|--------|-----------------------------------|-----------------------------|-----------|----------------------------|---------------------|------------|
| <b>LOCTITE® LB 8008™ C5-A® COPPER-BASED ANTI-SEIZE LUBRICANT</b>                        | 51147<br>51007    | 8 oz. brush-top can<br>1 lb. brush-top can  | Copper | -20°F to 1800°F (-29°C to 982°C)  | N/A                         | N/A       | Copper/Graphite            | 0.16                | No         |
| <b>LOCTITE® LB 8065™ C5-A® COPPER ANTI-SEIZE</b>                                        | 37229             | 20 g stick                                  | Copper | -20°F to 1800°F (-29°C to 982°C)  | N/A                         | N/A       | Copper/Graphite            | 0.16                | No         |
| <b>LOCTITE® LB 8009™ HEAVY DUTY ANTI-SEIZE</b>                                          | 51605<br>51606    | 9 oz. brush-top can<br>18 oz. brush-top can | Grey   | -20°F to 2400°F (-29°C to 1315°C) | N/A                         | N/A       | Graphite/ Calcium fluoride | 0.16                | Yes        |
| <b>LOCTITE® LB 8070™ HEAVY DUTY ANTI-SEIZE</b>                                          | 41205             | 20 g stick                                  | Grey   | -20°F to 2400°F (-29°C to 1315°C) | N/A                         | N/A       | Graphite/ Calcium fluoride | 0.16                | Yes        |
| <b>LOCTITE® LB 8040™ FAST ACTING CORROSION RELEASE (KNOWN AS FREEZE &amp; RELEASE™)</b> | 996456            | 13.52 oz. net wt. aerosol                   | N/A    | -4°F to 113°F (-20°C to 45°C)     | Mineral oils, Silicone-free | 1 cP      | N/A                        | N/A                 | Yes        |

\* K value on steel nuts and bolts.



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For further information about Henkel's products for the remanufacturing industry, please consult the following websites and download the highlighted literature.

### Cleaning & Surface Treatment Materials

[na.henkel-adhesives.com/surfacetreatment](http://na.henkel-adhesives.com/surfacetreatment)

Henkel Surface  
Treatment  
Selector Guide,  
LT-6267



Henkel Surface  
Treatment Field  
Guide,  
LT-6567



Metalworking Fluids  
Selector Guide,  
LT-6266

### Machining Lubricants & Coolants

[na.henkel-adhesives.com/metalworking](http://na.henkel-adhesives.com/metalworking)

The Adhesive  
Sourcebook,  
LT-3355



Maintenance  
Solutions  
Guide,  
LT-3722



### Reassembly Adhesives & Sealants

[na.henkel-adhesives.com/loctite](http://na.henkel-adhesives.com/loctite)

**LOCTITE®**  
**BONDERITE®**  
**TECHNOMELT®**  
**TEROSON®**  
**AQUENCE®**

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[na.henkel-adhesives.com/remant](http://na.henkel-adhesives.com/remant)  
[www.loctite.com](http://www.loctite.com)