

ReleaSys™ HTX30-LGR High Temperature Ceramic Coating

Description

Miller-Stephenson has developed a high-temperature industrial coating designed to provide unmatched release agent /anti-stick properties utilizing next-generation ceramic chemistry in a water-based, VOC-free formulation. Combining advanced nanoparticles and next-generation binder systems, ReleaSys™ HTX30-LGR develops an ultra-durable, thin-film coating on any metallic, ceramic or composite surface. This coating imparts a low coefficient of friction, high lubricity, and chemical barrier properties. The cured coating offers exceptional release properties, even at 1000°C, and complete protection from aggressive environments. The inert and non-wetting nature of the ReleaSys™ HTX30F make it an excellent surface coating for molds used to produce castings of light metals such as magnesium and for coating surfaces in glass making operations. ReleaSys™ HTX30F can inhibit corrosion and chemical attack in metal forming, glass-making and sintering processes, thereby increasing die life and improving product quality. Benefits include:

- High Temperature Stability up to 1000°C in air; 1800°C in Inert Atmospheres
- Exception durability and surface adhesion
- Low coefficient of friction
- 100% VOC free; no odor
- Water-based formulation

Applications

- Mold Release for High Temperature and Difficult to Mold Polymers and Composites
- Mold Release for Casting Metals, Glass, and Dies
- Mold Dressing for Powder Metal Processing
- Surface Coating for High Temperature Surfaces
- Barrier Coating for Aggressive Environmental Processes
- Specialty Lubricant for Drawing and Working Metals
- High and Low Temperature Dry Film Lubricant

Recommended Application Procedure

1. Clean surface thoroughly. Mechanical cleaning such as bead media blasting or steel wool, followed by chemical cleaning, provides the best surface for application of ReleaSys™ HTX30-LGR. Removal of all previous contaminants is critical.
2. **Mix product thoroughly before use and intermittent during use to maintain uniformity.**
3. **Concentrate:** ReleaSys™ HTX30-LGR is a concentrated product which can be used as is or diluted to lower concentrations. The undiluted product is ideally applied via brush or HVLP gun.
 - a. **Application should be of thin coats. Allowing each coat to dry completely before reapplication. Two coats are strongly recommended to ensure completely coverage.**

4. **Thick coats will cause “mud cracking” and loss of surface adhesion resulting in poor cure film properties, poor release characteristics and poor durability.**
5. The concentrate product will dry at room temperature rapidly, typically taking 10-30 minutes depending on ambient temperatures.
6. The coating can be used at this point, however optimal performance and durability is achieved if heat cured at ≥200°F for one hour or left overnight.
7. The coating once cured can be used as is, or gently buffed to achieve an optimally smooth surface.
8. **Dilution:** The product can be diluted 4:1 and (4 parts ReleaSys™ HTX30-LGR to 1 part DI water) with DI water to decrease viscosity, aid with spraying or to decrease film build. Dilution will increase dry times at room temperature.
9. The diluted product may more readily separate into two layers. If this occurs the product needs to be mix thoroughly and continuously during use.
 - a. Separation does not affect the performance of the product.
10. The diluted product can be applied to a heated surface to decrease dry times.
11. **Top Coat:** This product can be top coated with any of our current releasing agents in our ReleaSys portfolio to increase release ease, minimize mold fouling, and prolong the working life of the ReleaSys HTX30-LGR

Physical Properties:

Primary Polymer:.....Discrete Ceramic particle
 Appearance:.....White particle suspension
 Odor:.....Slight
 VOC:.....None
 Specific Gravity:.....1.0 g/mL @ 25°C

Shelf-Life

ReleaSys™ HTX30-LGR has a shelf life of 6 months from the date of shipment.

ReleaSys™ Product Line:

Miller-Stephenson offers a selection of high performance, semi-permanent release systems to meet your mold process needs. All variants of the ReleaSys™ Series will deliver higher productivity, lower rejection rates, and higher quality products.

Safety Data Sheet (SDS) is available upon request.

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