

Metal Guard[®] 310

Metal Guard 310 is an economical and versatile rust preventative, which leaves a corrosion-resistant, semi-dry film. Metal Guard 310 can be mixed with water in proportions ranging from 5 to 50% by volume, depending upon the desired degree of dryness and final film thickness. A "dry-to-the-touch" film is obtained on zinc phosphate surfaces when mixed at a ratio of one-part Metal Guard 310 to 8 parts of water. It is heated to 150°F, and is applied by dipping, spraying or brushing.

Metal Guard 310 is excellent when used as a quench oil after tempering where a black quenched finish is desired. For this application, the Metal Guard 310 is used at 15% by volume and 150°F. The surface temperature of the parts when quenched in the Metal Guard 310 should be a minimum of 625°F. in order to produce the black finish.

Features & Benefits

High flash point	Can be used in processes where flammability is a concern.
Water emulsified	No VOC's
Adjustable concentration	Final finish can range from oily to "dry-to-touch"

Typical Applications

- Final rust preventative after black oxide coatings
- Final rust preventative after machining or cleaning operations
- Final rust preventative after zinc or manganese phosphate coatings specified for many military and automotive applications
- Recommended as a quench oil after tempering where a black quenched finish is desired

Operating Conditions

A new Metal Guard 310 tank should be made up by adding the Metal Guard 310 to warm water (above 100° F) with agitation. Never add water to the oil. Once the tank is in use, replenishments of the Metal Guard 310 can be added directly to the tank.

Control Method

Equipment

100 mL Graduated Cylinder with stopper
Concentrated Hydrochloric Acid

Procedure

1. Measure out 90 mL of Metal Guard 310 in a stoppered graduated cylinder.
2. To that, add 10 mL of concentrated hydrochloric acid.
3. Stopper the cylinder, shake vigorously, vent and allow to stand for 10 minutes.
4. The oil will separate as a dark layer on top.
5. The amount of oil, read off the graduated cylinder, is the percentage of the Metal Guard 310.

i.e., If there are 13 mL of oil, then the concentration of the Metal Guard 310 is 13%.

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