# Metal Guard® 810

Metal Guard 810 is a clear, non-flammable mildly alkaline liquid which is used in metal finishing processes for protecting ferrous metals against rust during an "in process" operation.

Metal Guard 810 may be used in immersion operations, power wash machines, vibratory tumbling flow-thru systems, wet tumbling or as a spray cleaner addition.

## Features & Benefits

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| Excellent short-term-in-process rust protection | Prevents rust on high value parts between process steps |
| Easily soluble in water | Easily removed with a mild alkaline cleaner |
| Used at low concentrations | Cost effective over large applications |
| Low foam | Excellent for use in spray washers or as a burnish in vibratory mass finishing |

## Physical Data

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| Specific gravity | 1.26 |
| Vapor pressure | < 17.5 at 20°C |
| Solubility in water | Infinite |
| Appearance | Clear liquid |
| pH conc | 11.0 |

## Typical Applications

- In-process rust inhibitor
- Low foam spray cleaner
- Vibratory burnishing compound

## Operating Conditions

Immersion Method

Metal Guard 810 is used 0.25 to 1.0% by volume. This dip may be the final step after a sequence of wet operations such as tumbling, cleaning, etc. No visible films remain, and parts have temporary indoor protection for indefinite periods. Metal Guard 810 may also be used as a corrosion inhibitor in iron casting inspections where the part is immersed in water and air pressure applied. Parts do not rust while they are immersed in the water and are also protected after exposure to air.

Metal Guard 810 affords some protection after parts are rinsed subsequent to dipping. However, no rinsing after the dip is preferred for best rust protection.

Power Wash Method

The non-foaming characteristics of Metal Guard 810 make it an ideal product for use in power washers in the final rinse.

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| Concentration | 0.1 – 1.0% by volume in final rinse |
| Temperature | 100 – 160°F (37 – 71°C) |

A hot final rinse will facilitate the drying of the work.

Vibratory tumbling flow-through systems

Being a liquid, Metal Guard 810 is ideal for use in vibratory tumbling flow-through systems via automatic aspirators or similar arrangements. Metal Guard 810 is easy to add to the make-up tank as there are no solubility or crystallization problems with the material. Simple flow-through systems can be made by using a make-up tank of Metal Guard 810 and a gravity feed pipe-valve hook-up.

Concentrations of Metal Guard 810 for aspirator set-ups would be 2 to 8 oz/gallon in the sump or tank with a suction rate of 1 gallon of make-up solution to 10 to 20 gallons of feed water.

Concentrations for gravity feed flow-through would be 0.5 to 1.0% by volume.

In some vibratory flow-through systems, Metal Guard 810 may be the compound used throughout the tumbling cycle. It functions as the cleaner, rust inhibitor, lubricant and burnisher. Its mild nature makes it ideal for use in vibratory finishing of zinc surfaces.

## Titration Method

1. Measure a 200 mL sample into a 500 mL Erlenmeyer flask from a graduated cylinder.
2. Add 10 to 20 drops bromocresol purple indicator and mix.
3. Titrate with 0.5 N Hydrochloric Acid until the color changes from purple to yellow.
4. Record mL of 0.5 N Hydrochloric Acid used.

Calculation

*Concentration = mL 0.5 N HCl x 0.25*

## Test Kit Method

The test kit procedure for Metal Guard 810 is a slightly modified version of the typical alkaline test kit.

1. Measure a 25 mL sample of Metal Guard 810 solution, using a 25 mL graduated cylinder.
2. Add 5 drops Bromocresol Purple indicator and mix.
3. Add 0.72 N Hydrochloric Acid solution dropwise while swirling solution until the color changes from purple to yellow.
4. Record number of 0.72 N Hydrochloric Acid solution used.

Calculation

*Concentration = 0.72 N HCl x 0.14*

## Caution

Metal Guard 810 should not be used prior to welding, grinding, machining or any other process where excess heat would be applied.

Metal Guard 810 is a mildly alkaline liquid. Avoid skin, eye and oral contact. Wear protective clothing, gloves and goggles when handling the product. Flush exposed areas immediately with clean, cold water. Contact a doctor immediately in case of injury.

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