

# Mi-Clean 24

Mi-Clean 24 is a high-strength, liquid concentrate composed of a blend of acid, solvent, surfactants and chelators designed to accomplish in one step, the cleaning and preparation of a variety of metal surfaces prior to blackening, phosphating and chromating. It will remove most oils, rust, heat-treat scale and shop soils efficiently and quickly. It is a good pre-paint conditioner for steel and cleaner/etchant for aluminum with slow-controlled etching.

In contrast to highly alkaline cleaners, it is very free rinsing in water.

Mi-Clean 24 may be used in concentrations ranging from 5% to 50% by volume in water and temperatures from ambient to 140°F. The concentration, immersion time and temperature required will depend upon the degree of soil and surface oxidation. A 50% concentration is recommended with heavily rusted surfaces. A 5% concentration is recommended primarily for surface activation. Heating the solution will speed up the reaction and decrease the cleaning time.

Mi-Clean 24 can be contained in tanks made of stainless steel, lined steel, Polypropylene, Polyethylene, PVC or other acid-resistant materials.

Mi-Clean 24 concentrations may be maintained by simple periodic additions of concentrate or by a quick titration method, which is furnished upon request. It has a high tolerance for metals, soils and oils and does not pose a disposal problem.

## Features & Benefits

|   |   |
|---|---|
| One step concentrated cleaner               | Removes most oil, rust, and scale efficiently                     |
| May be used in concentrations from 5% – 50% | Tanks can be made of stainless steel, steel, Polypropylene or PVC |

## Titration Method

1. Pipet 10 mL of cooled bath sample into a 250 mL flask.
2. Add about 75 mL water.
3. Add 5 drops Phenolphthalein indicator and swirl to mix well.
4. Titrate with 1.0 N Sodium Hydroxide until solution color turns pink.
5. Record mL used.



#### Calculation

$$\text{Concentration} = \text{mL } 1.0 \text{ N NaOH} \times 0.60$$

### Test Kit Method

1. By means of the dropper pipet transfer 2 mL of the Mi-Clean 24 production solution to the 150 mL beaker. Add 5 to 10 mL water.
2. Add 6 to 8 drops of Phenolphthalein indicator.
3. Add the 12.0 N Sodium Hydroxide from the dropping bottle, counting the drops while constantly swirling the solution until a permanent pink to red color develops.
4. Record the number of drops used.

#### Calculation

$$\text{Concentration} = \# \text{ Drops } 12.0 \text{ N NaOH} \times 1.25$$

### Caution

May cause skin irritations. Use only with adequate ventilation. Do not breathe vapor. Avoid contact with skin or eyes. In case of contact, flush skin or eyes with plenty of water. For eyes, get medical attention. Do not take internally.

**WARRANTY:** HUBBARD-HALL INC. IS NOT RESPONSIBLE FOR THE MISUSE, MISAPPLICATION, OR MISHANDLING OF THIS PRODUCT. SEE THE TERMS AND CONDITIONS OF SALE ON OUR WEBSITE FOR ADDITIONAL TERMS AND CONDITIONS CONCERNING OUR PRODUCTS, INCLUDING BUT NOT LIMITED TO, LIMITATIONS AND DISCLAIMERS OF WARRANTIES AND LIABILITIES.

## Our People. Your Problem Solvers.

For more information on this process,  
please call us at 203.756.5521 or email: [techservice@hubbardhall.com](mailto:techservice@hubbardhall.com)

Hubbard-Hall holds certifications for **ISO 9001:2015**, Responsible Distribution, as accredited by the **ACD** (Alliance for Chemical Distributors) and as a **Women-Owned Small Business**, as well as maintaining an association with **Omni-Chem**<sup>136</sup>