

Oxide Remover for Ferrous Substrates

- * EFFECTIVE ON LASER AND PLASMA SCALE
- * REMOVES WELD OXIDE AND INORGANIC SOILS

DESCALE 62 is an acidic liquid designed to clean and deoxidize ferrous metal surfaces in a spray or immersion system. **DESCALE 62** will thoroughly remove oxidation in preparation of iron phosphate, zinc phosphate or zirconium oxide surface treatment. Using the **DESCALE 62** laser oxide treatment in conjunction with the surface treatment will provide excellent adhesion and corrosion resistance of the subsequently applied organic coating. **DESCALE 62** is specifically designed to remove scale formed on laser and plasma cut edges to alleviate edge adhesion issues. **DESCALE 62** is also used to remove burned oil and oxide formed from welding processes. **DESCALE 62** can also be used to remove stains formed on aged steel and rust formed during prolonged storage.

PHYSICAL PROPERTIES

Liquid, colorless, clear
Mild acrid odor
Density: 10.0 lbs/gal

OPERATING CONDITIONS

	Range	Typical
Concentration	3 - 15% by volume	6% by volume
Temperature	120 - 160°F	140°F
Time	60 - 120 seconds	90 seconds

TYPICAL PROCESS

1. Clean
2. Rinse
3. Deoxidize with **DESCALE 62**
4. Rinse
5. Iron phosphate
6. Rinse
7. Post rinse



Optional Processes:

DESCALE 62 can be used in a five-stage, power spray washer. **DESCALE 62** can also be used within a zinc phosphate pretreatment sequence. Consult your Coral Consultant for implementation details.

EQUIPMENT

None of the usual stainless steel alloys are totally resistant to the **DESCALE 62** processing solution. Type 316 stainless steel alloys will provide satisfactory service. We recommend its use for the construction of tanks, piping, pumps, and heat transfer surfaces.

INITIAL CHARGING PROCEDURE

1. Fill the tank to 2/3 the final volume with clean, cool water.
1. Add the required amount of product slowly, with sufficient agitation to ensure thorough mixing.
3. Add cool water to increase the volume to the operating level. The solution is then ready to be heated to operating temperature.

SOLUTION CONTROL: Concentration Determination

Materials required: 10 ml pipet
125 ml glass flask
Automatic burette assembly
0.04% Bromocresol Green (LIN-003)
1.0N Sodium Hydroxide (LTS-014)
Distilled or deionized water

Titration Procedure for Concentration:

1. Pipet a 10 ml sample of the bath into a 125 ml glass flask.
2. Add 4-5 drops of 0.04% Bromocresol Green (LIN-003).
3. Add 50 ml of deionized or distilled water.
4. Titrate with 1.0N Sodium Hydroxide (LTS-014) until the sample turns from yellow to burnt orange-green. Note: the color change on a fresh solution will be green. As the bath ages the "green" color endpoint will become tainted with burnt orange due to the presence of iron.



Concentration: mls of 1.0N Sodium Hydroxide (LTS-014) required times the product factor, 1.25, equals the concentration in percent by volume of product in solution.

mls 1.0N Sodium Hydroxide (LTS-014)	% by volume
2.4	3
4.8	6
7.2	9
9.6	12

REPLENISHING

A bath made up at 6% by volume will have a titration of about 4.8 mls. The titration, bath concentration, should be maintained between 4.5 and 5.1 mls.

ALTERNATE SOLUTION CONTROL PROCEDURE

Materials required:

- 25 ml pipette or graduated cylinder
- 150 ml glass beaker
- Automatic burette assembly
- pH Meter
- Small Stir Magnet
- Magnetic Stir Plate
- 0.1N Sodium Hydroxide (LTS-008)

1. Measure a 25 ml sample of the bath into a 250 ml beaker. Place magnetic stir bar in beaker and place on magnetic stir plate.
2. Place pH probe in the solution and away from being contacted by the stir bar. Turn stirrer on slowly to make sure it doesn't hit the pH probe.
3. Titrate with 0.1N Sodium Hydroxide (LTS-008) until the sample's pH is 4.0.
4. Record the mls of 0.1N Sodium Hydroxide (LTS-008) required to achieve a pH of 4.0 as the free acid value.



Concentration: mls of 0.1N Sodium Hydroxide (LTS-008) required times the product factor, 0.17, equals the concentration in percent by volume of product in solution.

mls 1.0N Sodium Hydroxide (LTS-014)	% by volume
11.8	2.0
17.6	3.0
23.5	4.0
29.4	5.0

REPLENISHING

A bath made up at 4% by volume will have a titration of about 23.5 mls. The titration, bath concentration, should be maintained between 22.3 and 24.7 mls. The addition of 1.7 gallons of the product per 1000 gallons of solution will increase the strength approximately 1.0 ml.

SOLUTION CONTROL: Dissolved Iron Determination

Materials Required: 10 ml pipet
 125 ml glass flask
 50% Sulfuric Acid (LRS-013)
 0.185N Potassium Permanganate (LTS-028)

Titration Procedure for Dissolved Iron:

1. Pipet a 10 ml sample of the bath into a 125 ml glass flask.
2. Add approximately 1 ml of 50% Sulfuric Acid (LRS-013).
3. Titrate with 0.185N Potassium Permanganate (LTS-028) until the solution turns pink, and the pink color persists for 10-15 seconds.
4. Record the numbers of mls required to maintain the pink color for 10-15 seconds as the dissolved iron.



mls 0.185N Potassium Permanganate (LTS-028)	% iron
1.0	0.1
2.0	0.2
3.0	0.3
4.0	0.4
5.0	0.5
6.0	0.6

Solution Maintenance:

The dissolved iron content needs to be maintained to produce consistent, acceptable results. The iron content in the **DESCALE 62** solution will increase as production ware is processed. Maintain the iron concentration below 0.4 % through the use of an auto-drain technique or through chemical or mechanical remediation. Consult your Coral Consultant for details. If the iron content becomes greater than 0.5 % you will need to discard a portion of the bath, increase the amount of overflow, or increase the concentration of **DESCALE 62** to maintain proper oxide removal.

PRECAUTIONARY INFORMATION

Consult the product Safety Data Sheet for all safety and handling information prior to using this product.

NEUTRALIZATION GUIDELINES

To help adjust the pH of the descale solution back towards neutral, the addition of 0.38 gallons of pH Plus (091-002) will neutralize about 1 gallon of **DESCALE 62**. The pH plus should be added slowly with agitation. Monitor the change in pH closely. Depending on the concentration of descale, heat may be generated during neutralization. Neutralization alone does not satisfy waste discharge or disposal rules, standards and requirements pursuant to Federal, State or Local laws. It is the responsibility of the user of Coral products to ensure compliance with the same.



WASTE DISPOSAL AFTER USE

Check your state, local and federal regulations on waste disposal to ensure compliance before disposing of any Coral product. Consult Coral if you are not sure how to treat this product for waste disposal.

STORAGE

Check your local, state and federal regulations on chemical storage to ensure compliance before receiving and storing Coral products. Generally, we recommend that users employ common sense storage precautions to protect their workers, first responders, facilities, sewers, and the environment from accidental spills and leaks of hazardous chemical products. Contact Coral for specific storage precautions not contained herein.

Revision Date: 11/06/2020

