Acid Pickle/Deruster, Liquid

Formulated for quick oxide penetration and removal
Laser and plasma oxide remover
Effective against rust and heat scale, too

DESCALE 59 is a concentrated acid liquid, which will remove weld burn, rust, heat scale, and corrosion products from ferrous metal parts. **DESCALE 59** can be used in an immersion system or a spray system. **DESCALE 59** can remove oxides formed from laser and plasma cut steel. The **DESCALE 59** treated parts will be prepared for further processing with a surface conversion or a rust preventative application for future processing.

PHYSICAL PROPERTIES

Liquid, clear
Light yellow color
Density: 13.0 lbs/gal

OPERATING CONDITIONS

	Immersion	Spray
Concentration	10 to 50% by volume	3 to 10% by volume
Temperature	Unheated to 120°F	110 to 160°F
Time	5 to 15 minutes	1 to 2 minutes

EQUIPMENT

None of the usual stainless steel alloys are totally resistant to the **DESCALE 59** 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 $^{2}/_{3}$ of the final volume with clean, cool water.
2. Add the required amount of **DESCALE 59** 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

Titrating Procedure for Immersion Systems:

Materials required: 5 ml pipet
125 ml glass flask
Automatic burette assembly
0.1% Methyl Orange (LIN-002)
1.0N Sodium Hydroxide (LTS-014)

1. Pipet a 5 ml sample of the bath into a 125 ml glass flask.
2. Add 3-5 drops of 0.1% Methyl Orange (LIN-002).
3. Titrate with 1.0N Sodium Hydroxide (LTS-014) until the sample turns from red to yellow-orange.

Concentration: mls of 1.0N Sodium Hydroxide (LTS-014) required times the product factor, 1.8, equals the concentration in percent by volume of product in solution.

mls of 1.0N Sodium Hydroxide (LTS-014)	% by volume
5.6	10
11.2	20
16.7	30
27.8	50

REPLENISHING

A bath made up at 30% by volume will have a titration of about 16.7 mls. The titration, bath concentration, should be maintained between 16.7 and 17.1 mls. The addition of 1.75 gallons of the product per 100 gallons of solution will increase the strength approximately 1.0 ml.

Titrating Procedure for Spray Systems:

Materials required: 10 ml pipet
125 ml glass flask
Automatic burette assembly
0.1% Methyl Orange (LIN-002)
1.0N Sodium Hydroxide (LTS-014)

1. Pipet a 10 ml sample of the bath into a 125 ml glass flask.
2. Add 3-5 drops of 0.1% Methyl Orange (LIN-002).
3. Titrate with 1.0N Sodium Hydroxide (LTS-014) until the sample turns from red to yellow-orange.

Concentration: mls of 1.0N Sodium Hydroxide (LTS-014) required times the product factor, 0.9, equals the concentration in percent by volume of product in solution.

mls of 1.0N Sodium Hydroxide (LTS-014)	% by volume
3.3	3.0
5.6	5.0
7.8	7.0
10.0	9.0

REPLENISHING

A bath made up at 5% by volume will have a titration of about 5.6 mls. The titration, bath concentration, should be maintained between 5.3 and 5.9 mls. The addition of 9 gallons of the product per 1000 gallons of solution will increase the strength approximately 1.0 ml.

Dissolved Iron Determination

Materials Required: 10 ml pipet
125 ml glass flask
50% Sulfuric Acid (LRS-013)
0.05N Potassium Permanganate (LTS-010)

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Titrating 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 0.05N Potassium Permanganate (LTS-010) 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 0.05N Potassium Permanganate (LTS-010)	% iron
3.6	0.1
7.2	0.2
10.8	0.3
14.4	0.4
18.0	0.5
21.6	0.6

Solution Maintenance:

The dissolved iron content needs to be maintained to produce consistent, acceptable results. The iron content in the **Descale 59** 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 59** to maintain proper oxide removal.

PRECAUTIONARY INFORMATION

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

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NEUTRALIZATION GUIDELINES

To help adjust the pH of the descale solution back towards neutral, the addition of 1.12 gallons of pH Plus (091-002) will neutralize about 1 gallon of **DESCALE 59**. 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.

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