Clean 'n Etch™

GREAT LAKES LABORATORIES

PRODUCT DATA

FOR USE BY	• Painter/Contractor • Industrial Maintenance • Chemical Coatings/Product Finishing
SUBSTRATES	• Concrete - Tilt Up, Poured, Precast • Masonry - Stucco, Cinder Block, Cement Board • Brick - Glazed, Unglazed • Steel - Hot Rolled, Cold Rolled • Galvanized - Hot Dipped, Galvaneal, Electrodeposition
FEATURES	• Cleans & Etches in One Step • No Acidic Vapors • No VOC • Saves Time and Labor • Neutralizes Alkali Salts • Cleans & Phosphates • Improves Corrosion Resistance
REMOVES	• Form Release Compounds • Oil, Dirt, Soot • Efflorescence & Laitance • Fabricating Oils, Lubricants, Smut, Fines and Rust Inhibitors • Passivation Films

1. PRODUCT DESCRIPTION

Clean 'n Etch is a concentrated, water reducible phosphoric acid detergent blend formulated to both clean and prepare concrete, masonry, steel, galvanized and zinc surfaces for coating, staining or sealing.

Clean 'n Etch is an economical concentrate which mixes readily with water and should be diluted before use.

2. ADVANTAGES

CONCRETE, MASONRY, BRICK

Clean 'n Etch reduces preparation time and cuts labor costs by eliminating the separate pre-cleaning and rinsing operation before etching.

STEEL, GALVANIZED AND ZINC

Clean 'n Etch will clean the surface and provide a phosphate conversion coating for improved corrosion resistance and enhanced coating adhesion. **Clean 'n Etch** has no acidic vapors or fumes, eliminating the risk of accidental corrosion of ductwork, electrical contacts in machinery and equipment and other sensitive surfaces. Additionally, **Clean 'n Etch** is ideal for use in areas with limited ventilation such as basements, swimming pools and containment areas.

Clean 'n Etch is odorless, non-flammable and is safe to use near vegetation. The favorable safety and environmental attributes of **Clean 'n Etch** improve productivity and reduce liability without sacrificing performance.

3. ADVANTAGES

CONCRETE, MASONRY, BRICK

Clean 'n Etch is ideal for cleaning and etching concrete floors, walls, basements, driveways, swimming pools and containment areas before coating, staining or sealing.

Clean 'n Etch saves time and labor by cleaning and etching in one operation. Because there are no acidic vapors, it is easier to use than muriatic acid and provides the even profile and uniform appearance preferred for clear coating applications.

STEEL, GALVANIZED AND ZINC

Clean 'n Etch can be used to clean and phosphatize steel, galvanized and zinc surfaces. **Clean 'n Etch** removes coolants, fabricating oils, smut, fines, lubricants, passivation films and rust inhibitors producing a conversion coating for improved corrosion resistance and enhanced coating adhesion.

4. APPLICATION (read precautions before using)

CONCRETE, MASONRY, BRICK

Clean 'n Etch can be applied with an acid-resistant, hand-pump sprayer, a plastic sprinkling can, or with a plastic pail and an acid-resistant brush.

For best results:

1) Select proper dilution (See guide on back)

2) Add concentrate to water and mix. If available, hot water will accelerate cleaning and etching.

3) Sweep loose debris and dampen the surface with water.

4) Apply solution and scrub with a stiff brush or broom until bubbling stops. NOTE: If no bubbling occurs, surface is coated with curing compounds or contaminants preventing etching. Remove contamination and reapply Clean 'n Etch.

5) Triple rinse with water to neutralize. For faster neutralization, rinse the surface with a 5 oz./gal. dilution of Great Lakes Laboratories No Rinse Prepaint Cleaner allowing 5 min. contact time. On floors, squeegee off rinse water to speed drying.

6) Allow the surface to dry thoroughly and check pH of the surface with pH indicator and distilled water. If the pH is below 7, repeat steps 5 and 6.

STEEL, GALVANIZED AND ZINC

Brush or spray solution onto surface or immerse parts in Clean 'n Etch solution. Refer to Dilution Guide for recommended concentrations. Allow 3 – 5 minutes contact time, rinse, wipe or force dry.

For passivated galvanized, use 1 part Clean 'n Etch with 2 parts water. Spray on surface, rinse off after 20 minutes. Apply coating when dry.

Cleaning Steel with hot water cleaning equipment
Concentration: 1 oz. - 4 oz. per gallon
Temperature: 120° - 180° F
Pressure: 800 - 3,000 psi

1) Thoroughly wet all surfaces of smaller parts. For larger parts, treat one section at a time working from the top down.

2) Spray each side of the part with the nozzle 6 - 12" from the surface maintaining a 45° spray contact angle for maximum soil removal. Use an overlapping spray pattern to assure complete coverage. Tilting parts aids soil removal and solution runoff.

3) Rinse with hot water to speed drying and help prevent flash rusting.

TROUBLE SHOOTING GUIDE:

WHITE POWDER appearing on the surface after drying indicates that the solution is too strong and/or the contact time is too long. Remove white powder before coating by wiping with a clean, dry cloth. To correct, reduce solution concentration and or reduce spray contact time.

If FLASH RUSTING occurs, increase contact time, increase solution temperature, or, increase rinse water temperature. Heated, forced air dry-off is recommended.

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CLEAN 'N ETCH
Product No. 899

IMPORTANT - Refer to the Material Safety Data Sheet for detailed cautionary information. Avoid inhalation of mist by wearing an approved respirator. Avoid eye contact by wearing chemical safety goggles. Avoid skin contact by wearing impervious rubber gloves, aprons and boots.

Clean 'n Etch

5. DILUTION GUIDE

Clean 'n Etch is concentrated and is intended to be diluted before use. Dilution rates will vary with surface conditions, application method and desired results. The dilution required should be determined by use on a small test area. Mix test solution based on the guide at right and compare the effectiveness of different concentrations. If available, hot water will improve cleaning effectiveness.

Heavy soil conditions may require stronger dilutions, longer contact time, repeated cleaning, and/or aggressive agitation.

CONVERSION:

1 pint	=	16 oz.
1 quart	=	32 oz.
1/2 gal.	= 2 qt. =	64 oz.
3/4 gal.	= 3 qt. =	96 oz.
1 gal.	= 4 qt. =	128 oz.
1 oz.	=	29.57 cubic cm.

6. COVERAGE FOR CONCRETE, BRICK AND MASONRY

Calculate the total Surface Area Sq. Ft. to be treated by multiplying the length by the width in feet.

Length X Height = Total Sq. Ft.

_____ X _____ = _____

To determine the approximate numbers of gallons of **Clean 'n Etch** required:

1) **Select Light, Medium or Heavy Soil Conditions from the chart below.**
2) **Find the Square Feet of Coverage closest to the Total Surface Area Square Feet to be treated.**
3) **Use the numbers in the "Gallons of Concentrate" column for an estimate of the gallons needed to treat a flat, smooth surface.**

COVERAGE CALCULATOR

Gallons of Concentrate	Square feet of Cleaning Coverage		
	Light Duty	Medium Duty	Heavy Duty
1	800	600	400
2	1,600	1,200	800
3	2,400	1,800	1,200
4	3,200	2,400	1,600
5	4,000	3,000	2,000
10	8,000	6,000	4,000
20	16,000	12,000	8,000
50	40,000	30,000	20,000
100	80,000	60,000	40,000

7. CASE HISTORIES

RESIDENTIAL BASEMENT (Painter/Contractor)

Job: Cleaning and etching basement floor before coating.

Substrate/Soil: Concrete/Light dust and dirt, laitance.

Equipment: Acid-resistant sprayer, push broom

Application: Dampened with water. Applied 3 part water: 1 part Clean 'n Etch solution using acid-resistant sprayer. Scrubbed with a push broom until bubbling stopped. Triple rinsed with water.

RESIDENTIAL GARAGE FLOOR (Painter/Contractor)

Job: Cleaning and etching garage floor.

Substrate/Soil: Concrete/Light dust and dirt, laitance.

Equipment: Plastic sprinkling can, push broom

Application: Dampened the surface. Applied 2 part water: 1 part Clean 'n Etch solution. Agitated surface with push broom with particular attention to the heavily soiled areas. Triple-rinsed with water.

USE THIS CHART AS A GUIDE FOR MIXING LARGER QUANTITIES

Concentration % and oz./gal.	Water	Clean 'n Etch	Water	Clean 'n Etch	Water	Clean 'n Etch
FOR STEEL	**For 1 Gal.**		**For 5 Gal.**		**For 55 Gal.**	
Light Duty .....3% (4 oz./gal.)	124 oz.	.4 oz.	4.75 gal.	.20 oz.	53.25 gal.	1.75 gal.
Medium Duty .....6% (8 oz./gal.)	120 oz.	.8 oz.	4.67 gal.	.40 oz.	51.75 gal.	3.25 gal.
Heavy Duty .....12% (16 oz./gal.)	112 oz.	.16 oz.	4.38 gal.	.80 oz.	48.5 gal.	6.50 gal.
FOR PASSIVATED GALVANIZED 33% (43 oz./gal.)	**For 1 Gal.** 85 oz.	.43 oz.	**For 5 Gal.** 3.4 gal.	1.6 gal.	**For 55 Gal.** 36.8 gal.	18.2 gal.
FOR CONCRETE, MASONRY & BRICK	**For 1 Gal.**		**For 5 Gal.**		**For 55 Gal.**	
Light Duty .....25% (32 oz./gal.)	96 oz.	.32 oz.	3.75 gal.	1.25 gal.	41.25 gal.	13.75 gal.
Medium Duty 33% (43oz./gal.)	85 oz.	.43 oz.	3.33 gal.	1.67 gal.	37.00 gal.	18.00 gal.
Heavy Duty .....50% (60 oz./gal.)	64 oz.	.64 oz.	2.50 gal.	2.50 gal.	27.50 gal.	27.50 gal.

RESIDENTIAL DRIVEWAY (Painter/Contractor)

Job: Cleaning and etching driveway before applying stain.

Substrate/Soil: Poured concrete / Oil, transmission fluid, dirt.

Equipment: Plastic sprinkling can, push broom

Application: Dampened the surface. Applied 2 part water: 1 part Clean 'n Etch solution. Scrubbed surface with push broom. Triple-rinsed with water.

COMMERCIAL PRINTER (Industrial Maintenance)

Job: Cleaning and etching floor by printing press.

Substrate/Soil: Concrete/Printing inks, scuff marks, dust.

Equipment: Mops, acid-resistant pails

Application: Mixed 1 part Clean 'n Etch: 3 part water solution and applied using mops. After 10 min. contact time, the surface was rinsed with water and air dried.

Comments: Muriatic acid could not be used because of risk of corrosive vapors the the presses.

AUTO PLANT PAINT SHOP (Industrial Maintenance)

Job: Cleaning and etching concrete floor before coating.

Substrate/Soil: Concrete/Light oil, scuff marks,tire marks.

Equipment: Acid-resistant sprayer, push broom

Application: Dampened the surface with water. Applied 3 part water: 1 part Clean 'n Etch solution with acid resistant sprayer & scrubbed with a push broom until bubbling stopped. Thoroughly rinsed & dried the surface.

Comments: Shot blasting was not possible because of dust contamination and muriatic acid could not be used because of the corrosion risk of vapors.

TRUCK-MOUNTED RACK FABRICATOR (Chemical Coatings/Product Finishing)

Job: Cleaning & phosphatize steel racks before applying water reducible coating.

Substrate/Soil: Hot rolled steel/Mill oil, fines, chips.

Equipment: Hand-pump sprayer

Application: 1 part Clean 'n Etch: 15 part water solution is applied to the racks working from the top down. Racks are hand wiped using clean shop cloths and blown dry with uncontaminated shop air.

FARM EQUIPMENT MANUFACTURER (Chemical Coatings/Product Finishing)

Job: Cleaning & phosphatize steel grain hoppers before coating.

Substrate/Soil: Hot rolled steel/Mill oil, welding smoke.

Equipment: Hand-pump garden sprayer, push broom

Application: The hoppers are pre-cleaned with Extra Muscle Prepaint Cleaner at 5 oz./gallon applied with a hand-pump garden sprayer and flushed off with a low-pressure hot water rinse. Following the pre-cleaning, a solution of 2.5 oz. of Clean 'n Etch per gallon of hot water is applied using a cloth wrapped around a push broom. The solution is liberally applied from the top working downward making certain all areas of the unit are contacted with the solution. The solution is allowed to dry on the surface and then an epoxy primer is applied followed by a urethane top coat.

PRODUCTION PAINTING SHOP (Chemical Coatings/Product Finishing)

Job: Cleaning & etching parts prior to cleaning.

Substrate/Soil: Ferrous and non-ferrous metals / Mill oil, lubricants.

Equipment: Acid-resistant immersion tank heated to 140ºF

Application: Parts are immersed for 5 minutes in a 4 oz./gallon solution and then rinsed with hot water and dried with a compressed air blow-off.

8. SAFETYAND HEALTH DATA

Clean 'n Etch is non-flammable, non-carcinogenic, and contains no petroleum or chlorinated solvents.

9. RESEARCH

Clean 'n Etch has been accepted with an A-3 category designation as a general cleaning agent on all surfaces or for use with steam or mechanical cleaning devices in all departments of USDA inspected facilities.

10. AVAILABILITY

Clean 'n Etch is available through dealers and distributors throughout the United States and is manufactured in Livonia, Michigan. Call or write Great Lakes Laboratories, Inc. for a list of dealers and distributors.

Clean 'n Etch is available in 1 gallon plastic bottles (4 per case), 5 gallon plastic pails with reclosable spouts for pouring, and 55 gallon drums.

11. TECHNICAL SERVICES

Technical advice furnished by Great Lakes Laboratories, Inc. concerning any use or application of Clean 'n Etch is reliable as current technology allows and the company makes no warranty, express or implied, of any use or application for which such advice is furnished. Technical assistance and information is available upon request by writing or calling Great Lakes Laboratories Inc. toll-free at (800) 888-1105.