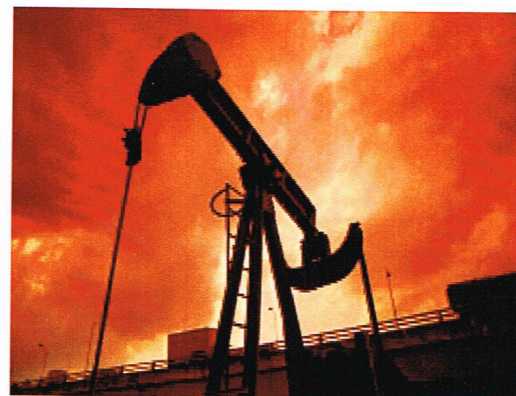


# Lubchem Industrial Cleaning Products

**Foam Cleaning  
Vessel & Piping Cleaning**



# Industrial Cleaning Products



For additional information or assistance please contact your local Lubchem representative.

## Lubchem TubeFoam Cleaning System

The Lubchem Tube Foam cleaning method restores cooling efficiency by removing deposits from the surfaces of air fin coolers that inhibit heat transfer rates. By removing deposits, processes and engines operate cooler with increased efficiency and reduced downtime. The Tube Foam System consists of specialized chemicals and equipment that are used to apply a heavy "shaving cream like" foam into and around the fin fan coils. As the chemical foam dissipates the deposits are gently removed from the cooling surfaces.

This system is designed to chemically remove accumulations of organic and inorganic deposits such as oils, calcium, dust, dirt and other deposits. This unique cleaning method minimizes chemical requirements by keeping the chemical in place on the deposit long enough for the active ingredients to penetrate and remove deposits from the fin fan coils. The Tube Foam system cleans without the use of damaging high-pressure washing.

### Applications

- Jacket Water/Oil Coolers
- Evaporator Overhead Coolers
- Glycol and Amine Cooler
- Still Overhead Coolers
- Dehydrator Coolers
- Gas Coolers
- Compressor Cooler

### High Foam D1

A concentrated biodegradable blend of chemicals designed to remove hard water and scale deposits from metal surfaces.

### High Foam D2

A biodegradable concentrate designed to remove deposits from fin fan coils.

### Availability:

HF-D1 & D2 are available in 55-gallon nonreturnable drums and bulk.

### Procedure:

The Lubchem Tube Foam System is used to inject chemical foam into and around cooler coils until the desired result is obtained.

### Air Requirements:

The air requirement to operate the Tube Foam Unit is 80-scfm continuous air supply @ 100 psig.



### Chemical Requirements:

To estimate chemical requirements per cooler use the following formula:

$$\text{ft}^3 \times .75 / 7.35 = \text{Gallons}$$

This formula is used to estimate the amount of liquid chemical required to generate enough foam to clean a typical cooler. If heavy scale deposits are present the sum of the formula may be doubled.

In the case of coolers with heavy scale deposits presoak the cooler with High Foam D1 liquid. Then begin the application of the D1 until the deposit is removed.

### Rinse & Neutralization:

Fresh water rinse and neutralization with HF-D4 neutralizer are the final steps in the procedure.

### Waste Water:

Lubchem containment systems can be put in place to capture waste water for disposal in accordance with the customers environmental policy.

### Training:

The Tube Foam System is available for use in house. Training programs can be conducted in many different forms and are tailored to meet the customer's requirements.

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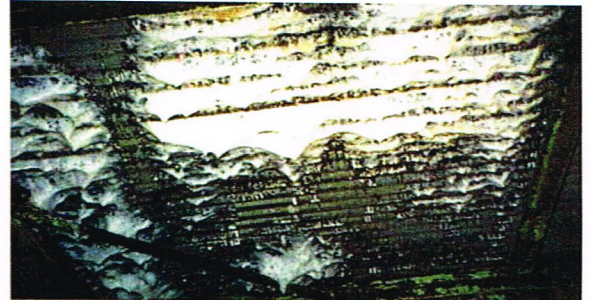
## Lubchem Foaminator Fin Fan Cleaning System

The Lubchem Foaminator is an external cleaning system designed to keep fin fan coolers operating efficiently. By removing deposits that inhibit heat transfer rates, processes and engines operate cooler with increased efficiency and reduced downtime. This unique cleaning method minimizes chemical requirements by keeping the chemical in place on the deposit long enough for the active ingredients to penetrate and remove the deposits from the fin fan coils. The Foaminator system cleans without the use of damaging high-pressure washing or internal pressurization of the coils.

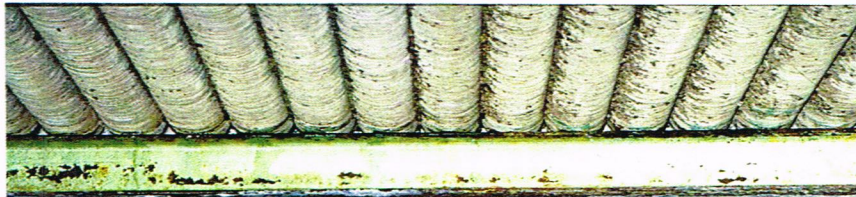
### Application



### Cleaning



### Before



### After



The Foaminator System consists of specialized chemicals and equipment. The Foaminator pumping system is used to form and inject a dense heavy "shaving cream like" foam into and around the fin fan coils. The chemical foam dissipates slowly while removing the deposits from the fin surface. The Foaminator will remove severe accumulations of hard mineral deposits such as calcium, as well as dust, dirt, and other deposits.

Foaminator D1 - is a concentrated biodegradable blend of chemicals designed to remove hard water and scale deposits from metal surfaces.

Foaminator D2 - is a biodegradable concentrate designed to remove deposits from fin fan coils.

### Cleaning Services

Lubchem, Inc. offers cleaning services for large and small scale cleaning jobs. For more information, or for an estimate contact your Lubchem representative. Foaminator D1 & D2 are available in 55-gallon non-returnable drums and bulk.

The information contained and the recommendations made in this data sheet are based upon data collected and believed by us to be correct. However, no guarantee or warranty of any kind expressed or implied is made herein with respect to the merchandise described and we assume no responsibility for the results or the use thereof. Lubchem, Inc., PO Box 2626, Spring TX, 77383-2626. Tel (281) 350-9600, Fax (281) 288-0849.



# Industrial Cleaning Products

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## Lubchem Industrial Vessel and Piping Cleaning Chemicals



Internal cleaning of process piping and vessels is essential to protect both the investment and the operational efficiency of the unit. Lubchem process cleaning chemicals enhance cleaning operations and should be used to maintain existing process units and piping. Lubchem cleaning fluids will provide a clean line condition, corrosion remediation, a protective durable coating and a sound base for ongoing corrosion treating programs.

### The Lubchem Process Cleaners

IS-1000, IS-1100, IS-1500 and IS-2000 vessel cleaning fluids are highly concentrated liquid blends of biodegradable surfactants, wetting agents, and dispersants. These materials are coupled into an appropriate system designed to remove corrosion products, scales, paraffin, asphaltines, lube oils and greases imbedded in pipeline walls. Lubchem cleaning fluids emulsify and disperse oil wet surfaces and suspend solids in an aqueous solution until removed from the unit via circulation.

### Lubchem Corrosion Remediation

Lubchem IS-2000 and IS-2000C complex cleaners are designed for use after the major contaminants of solid debris and oils have been removed from the line. These products remove scale and corrosion that have become part of the surface of the metal. These products actually stop the corrosion process, stabilize the metallurgy on the internal surfaces of the unit, and provide an insoluble coating that will readily bond with corrosion inhibitors.

# Industrial Cleaning Products



For additional information or assistance please contact your local Lubchem representative.

## IS-1000 Cleaning Fluid

### Dispersant / Detergent

#### Product Description:

IS-1000 is a non-hazardous blend of biodegradable surfactants, dispersants and wetting agents designed to thoroughly clean the ID of process units and piping. IS-1000 will lift deposits of black powder, oils, greases, salts, other solid debris (including corrosion products) from the surface of the metal. IS-1000 will hold the debris in suspension and allow it to be flushed from the system.

#### Application Guidelines:

IS-1000 should be applied via batch treatment. This product can be pumped into the line pre-diluted or pumped into the line as separate components (water/chemical) according to the recommended dilution ratio. The recommended dilution is 10 to 15% depending upon the severity of the problem.

#### Typical Properties:

Color/Odor	Clear Amber Liquid / Soap Odor
Flash Point, F	>200
pH	8 to 8.5
Solubility	Water Soluble Oil Dispersible

#### Material Handling:

Before using this chemical, read the material safety data sheet. In case of contact with the skin, flush with water. Avoid contact with eyes. Should contact occur, flush eyes with water for 15 minutes and call physician. If swallowed, do not induce vomiting; drink a large glass of water and contact physician immediately.



For additional information or assistance please contact your local Lubchem representative.

## IS-1100 Cleaning Fluid

### Dispersant / Detergent

#### Product Description:

IS-1100 is a caustic based water-soluble blend of surfactants, dispersants and wetting agents designed to thoroughly clean the ID of crude oil & gas pipelines. IS-1100 will lift deposits of oils, greases, salts, asphaltines, paraffin and other solid debris (including corrosion products) from the surface of the metal. IS-1100 will hold the debris in suspension and allow it to be flushed from the system.

#### Application Guidelines:

IS-1100 should be applied via batch treatment. This product can be pumped into the line pre-diluted or pumped into the line as separate components (water/chemical) according to the recommended dilution ratio. The recommended dilution of IS-1100 is 15% to 35% depending upon the severity of the problem.

#### Typical Properties:

Color/Odor	Clear Amber Liquid / Soap Odor
Flash Point, F	>200
pH	12
Solubility	Water Soluble Oil Dispersible

#### Material Handling:

Before using this chemical, read the material safety data sheet. In case of contact with the skin, flush with water. Avoid contact with eyes. Should contact occur, flush eyes with water for 15 minutes and call physician. If swallowed, do not induce vomiting; drink a large glass of water and contact physician immediately.

# Industrial Cleaning Products



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## IS-1500 Cleaning Fluid

### Dispersant / Detergent

#### Product Description:

IS-1500 is an oil soluble emulsifier detergent containing surfactants, dispersants and wetting agents in an aromatic solvent. IS-1500 is designed to thoroughly remove agglomerated paraffin deposits on the ID of process units and piping. IS-1500 will penetrate existing paraffin; coat the small particles to prevent them from sticking together. IS-1500 will lift and disperse deposits of paraffin, oils, greases, asphaltines and other solid debris from the surface of the metal. IS-1500 will hold paraffin and asphaltines in solution, debris in suspension, and allow it to be flushed from the system.

#### Application Guidelines:

IS-1500 should be applied via batch treatment. This product can be pumped into the line pre-diluted with an aromatic solvent or pumped into the line as separate components (aromatic/chemical). IS-1500 should be diluted to about 10% to 25% depending upon the severity of the problem. For pre-cleaning treatments, IS-1500 may be batch treated at 50 to 1000 ppm/oil depending upon the severity of the problem.

#### Typical Properties

Color/Odor	Clear Amber Liquid / Aromatic Odor
Flash Point (PM)	85 °F
Specific Gravity (H <sub>2</sub> O = 1):	.91
Solubility	Oil Soluble
Water Dispersible	

#### Material Handling

Before using this chemical, read the material safety data sheet. IS-1500 is a flammable liquid; therefore normal precautions for industrial chemicals apply. In case of contact with the skin, flush with water. Avoid contact with eyes. Should contact occur, flush eyes with water for 15 minutes and call physician. If swallowed, do not induce vomiting; drink a large glass of water and contact physician immediately.



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## IS-2000 Corrosion Remediation & Cleaning Fluid

### Product Description:

IS-2000 is a balanced blend of chemicals containing surfactants, wetting agents, and a mild acid additive designed to chemically remove corrosion products from pipe walls and prepare the metal surface for the application of corrosion inhibitors. When used on ferrous metals, IS-2000 reacts with ferrous oxide to form a hard, dark and impervious protective coating which is a part of the metal surface. IS-2000 will stabilize the metallurgy and provide a surface that more readily bonds with filming corrosion inhibitors and, as a result, will increase corrosion protection and dramatically reduce wall loss per year. When used properly IS-2000 will not harm ferrous or non-ferrous metals. Do not use on zinc.

### Application Guidelines:

IS-2000 should be applied via batch treatment. This product can be pumped into the line pre-diluted or pumped into the line as separate components (water/chemical) to the recommended dilution ratio of 50%.

### Typical Properties:

Color/Odor (IS-2000C)	Clear Liquid / Slight Odor
pH	2
Specific Gravity (H <sub>2</sub> O = 1):	1.24
Solubility in water	Complete

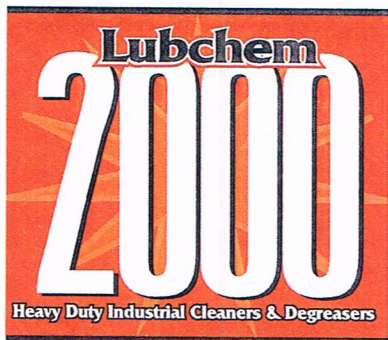
### Material Handling:

Before using this chemical, read the material safety data sheet. In case of contact with the skin, wash with soap and water for 15 minutes. Avoid contact with eyes. Should contact occur, flush eyes with water for 15 minutes and call physician. If swallowed, do not induce vomiting. Contact physician immediately.





## Product Description



**Lubchem 2000** is a heavy duty caustic based degreaser designed for use through a pressure system. This is a surface active, high pH alkaline cleaner that will emulsify heavy greases and soils found in industrial maintenance operations. This product can be used on concrete, stainless steel, ceramic, iron and steel.

**Caution:**

Do not use this product on painted surfaces prior to proper dilution.

ALWAYS TEST FIRST in an inconspicuous area prior to use.

**Dilution Ratio:**

Can be diluted up to 1 part cleaner to 50 parts water.

**Ordering Information:**

Part number .....	Description
33021 .....	6-1 gallon plastic bottles
33029 .....	5 gallon pail w/ pour spout
33056 .....	55 gallon drum

## Product Description



**JB - 66** is a highly concentrated industrial degreaser formulated as a safe alternative to caustic based degreasers.

**JB - 66** contains no butyl's or phosphates and is ideal for use in all industrial and marine degreasing applications.

**JB - 66** will lift and emulsify soils and hold them in suspension. It will emulsify petroleum oils, fats, greases and when diluted properly, clean all surfaces quickly and safely.

**Dilution Ratios:**

**JB - 66** may be diluted with ordinary tap water.

Full strength to 1:5

Presoaking - degreasing engines, parts cleaning, extremely tough jobs.

1:10

Heavy degreasing of equipment and facility maintenance such as heavy floor cleaning.

1:15 Routine maintenance, pressure cleaning and steam cleaning

**Ordering Information:**

Part Number .....	Packaging
32721 .....	6/1 gallon plastic bottles
32729 .....	5 gallon Pail w/ pour spout
32756 .....	55 gallon drum