

PRODUCT DATA

HOUGHTO-CLEAN® 3502

HEAVY DUTY LIQUID ALKALINE CLEANER, RUST REMOVER AND PAINT STRIPPER

Houghto-Clean 3502 is a liquid heavy-duty, water soluble, alkaline cleaner for ferrous metals that removes rust, heat stains and scale, phosphate coatings and paint. **Houghto-Clean 3502** is a carefully formulated balance of liquid, alkaline salts and chelating agents.

Since it is a liquid, **Houghto-Clean 3502** offers several advantages over conventional powdered alkaline rust strippers and cleaners. There is no danger of harmful and obnoxious dusts being present in the atmosphere; additions to the cleaning tank are made easily and without the hazard of extremely dangerous "blow backs" from hot solutions.

Houghto-Clean 3502 is efficient on abnormal soils and residues that are difficult to remove with conventional cleaners because it employs a chemical process known as "chelation." Chelation is the conversion of metallic salts and oxides into complex compounds that are readily soluble in an aqueous alkaline system. This chelating action enables solutions of **Houghto-Clean 3502** to remove rust, smut and some types of heat scale at the same time it removes oil, grease, dirt and other soils.

Used as an alkaline rust and heat scale remover, **Houghto-Clean 3502** acts quickly and efficiently, leaving a chemically clean surface on the work after a thorough rinsing. If surfaces are not processed immediately, protect against rusting with Rust Veto 4214.

Houghto-Clean 3502 is an ideal rust and heat scale remover. Because it is on the alkaline side, there is no danger of metal loss causing a dimensional change. Since **Houghto-Clean 3502** is alkaline rather than acidic in nature, the danger of hydrogen embrittlement and the blistering of any subsequently applied coatings is substantially reduced.



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Houghto-Clean 3502 removes a wide variety of paints, many of which are not affected by ordinary alkaline strippers. In addition to stripping the paint, **Houghto-Clean 3502** also removes any oil or grease present on the painted surface as well as any rust or phosphate coatings underneath the paint. An extremely versatile product, **Houghto-Clean 3502** can also be employed as an electro-cleaner for extremely difficult soils such as heavy rust or heavy heat treat scales.

Houghto-Clean 3502 can also be used in tumble barrels for cleaning and deburring ferrous parts and in steam guns as a heavy-duty steam cleaner.

TYPICAL PHYSICAL PROPERTIES

Appearance	Thin, pale yellow liquid
Total Alkali	27-30% as Na ₂ O
Pounds per Gallon	11.5
Solubility	Unaffected by freezing
Effect on Metals	Safe on ferrous metals, will etch aluminum and zinc
Rinsability	Free rinsing, leaves a chemically clean surface
Free Caustic	Present
Carbonates	None
Silicates	None
Phosphates	None
Operating Temperatures	180°F (82.2°C) to boiling
Use Concentrations	5-35% by volume

APPLICATIONS

Here are some typical applications selected from a variety of uses where **Houghto-Clean 3502** has provided excellent results.

<u>USE</u>	<u>DETAILS</u>
1. To remove ordinary soils.	1. 12 to 24 oz. per gallon of water (90 to 240 g/l) at 200°F (93.3°C) to boiling.
2. To remove ordinary rust and heat stains.	2. 2-4 lbs. per gallon of water (240 to 480 g/l) at 200°F (93.3°C) to boiling.
3. To remove heavy rust and heat stains.	3. Up to 6 pounds per gallon of water (720 g/l) at 200°F (93.3°C) to boiling. Longer soak times may be required.
4. To remove extremely heavy rust and heat scale.	4. Electro-clean with 4-6 pounds of Houghto-Clean 3502 per gallon of water (480 to 720 g/l) at 180°F (82.2°C) 10-16 oz (75 to 120 g/l) of cyanide per gallon of water can be added in extreme cases.
5. Cleaning and deburring iron and steel in a tumble barrel.	5. 2-4 oz. per gallon of water (15 to 30 g/l) at room temperature.
6. Stripping paints and lacquers.	6. 2-4 pounds per gallon of water (240 to 480 g/l) at 180-210°F (82.2 to 98.9°C). Soak or flow-on method can be employed.

ADVANTAGES

- ◆ Versatile - removes a wide variety of soils.
- ◆ Free flowing
- ◆ Completely miscible with water at all proportions
- ◆ Does not require special tanks or equipment
- ◆ No hydrogen embrittlement
- ◆ Removes oil, paint, rust and scale in one operation
- ◆ No acid attack and no dimensional changes
- ◆ No blistering of subsequent plated coatings
- ◆ No danger of over-pickling
- ◆ No acid fumes
- ◆ Efficient
- ◆ Non-foaming

SHIPPING INFORMATION

Houghto-Clean 3502 is shipped in 55 (U.S.) gallon (208 liter) steel drums containing 500 pounds (227 kg).

STORAGE/HANDLING/DISPOSABILITY

No health or safety hazards exist when **Houghto-Clean 3502** is stored, used and disposed of in accordance with instructions given on the Material Safety Data Sheet for this product.

WARRANTY

The information given here is considered to be correct and is offered for your consideration, investigation and verification. No warranties are expressed or implied since the use of our products is beyond our control. Statements concerning the use of Houghton products are not to be construed as recommending the infringement of any patent.

EXPORT STATEMENT

This commodity and its technology are subject to the export control laws and regulations of the United States Government. Buyer agrees that it shall not make any disposition, by way of export, diversion, transshipment, re-export or otherwise, except as expressly permitted under United States law.

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