

Cutting Oil - WS200 – PDS

PREMIUM SOLUBLE OIL FOR INCREASED METALWORKING EFFICIENCY

PRODUCT LINE

WS200 B is a soluble oil for making emulsions for use in turning, milling and grinding operations where the proper cooling of the workpiece is essential. It is Rust-X's most versatile general purpose soluble oil and it has a performance which will satisfy most of the requirements of machine shop applications.

WS200 B is recommended for sawing, turning, milling, boring and grinding, particularly where it has to be mixed with water which has a hardness above 400 ppm. It can also be used for quenching induction heated parts, as a roll coolant and as a corrosion inhibitor in hydraulic systems where water is used as the hydraulic medium. Because **WS200 B** contains a Biocide, no other system bacterial protection is normally required.

WATER HARDNESS

The maximum acceptable water hardness -- as Calcium Carbonate -- at which **WS200 B** can be used is 12 grains per litre or 700 ppm.

SYSTEM PREPARATION

Soluble oil systems should always be thoroughly cleaned prior to the introduction of a new fluid or recharging with a fresh charge of the existing fluid. Commercial cleaners are available that can be added to the emulsion which is already in use.

Circulation of an emulsion/cleaner mix will loosen deposits formed from metallic fines, tramp oil, and other contaminants which can accumulate in various parts of the system. Systems being changed due to bacterial growth should be dosed with a suitable biocide, along with the cleaner, and then circulated prior to draining and recharging. This method will kill many bacteria in hidden spots in the system.

Following the circulation of the emulsion-cleaner-biocide mixture and the removal of this mixture, the system should be flushed with fresh water to remove any deposits loosened by the cleaner as well as any of the mix that might be trapped. All strainers, filters, and separators should then be cleaned or changed as appropriate and all fines, dirt, sludge, etc., should be removed from the system storage vessel.

PREPARATION OF WS200 EMULSION

VERY IMPORTANT:

Normal emulsions consist of finely dispersed droplets of surrounded by water. If the water is added to the neat soluble oil, an "invert" emulsion might result. An invert consists of water droplets surrounded by oil and it may have the consistency of **mayonnaise**.

Air agitation is not recommended for the initial mixing of emulsions of **WS200** because the air can evaporate its stabilizers. Such agitation can produce unusual emulsions containing particles with the appearance of cottage cheese "curds". Frequently these will float on the surface instead of breaking up and emulsifying. Vigorous mechanical agitation provides a better emulsion.

The normal dilution ranges employed for typical applications on steels, steel alloys, cast iron, aluminum, copper, brass and bronze, are listed below:

Operation Dilution Ratio ¹

Grinding 30:1 to 50:1

Sawing 15:1 to 30:1

Turning 15:1 to 30:1

Milling and Boring 10:1 to 15:1

Drilling and Reaming 10:1 to 15:1

¹ Parts of water to parts of oil.

Caution: - **WS200** emulsions - as with all emulsions - should never be used on metals containing Magnesium because fire might result from water coming into contact with this metal.

SYSTEM CARE

Proper care and maintenance can extend the fluid life and performance, and the following are a few hints which may be of help:

- Keep the system clear of any contaminants that can promote bacterial growth or provide food for bacteria. Good housekeeping practices should be established and enforced.
- The concentration of any water extendible cutting fluid must be kept within limits to provide optimum performance. Portable refractometers are available from several commercial sources for monitoring concentration.
- Periodic measurements of the pH of a system should be used to detect unusual forms of contamination and adjust fluid maintenance schedules. For most operations the pH should be maintained between 8 and 10

PERFORMANCE BENEFITS

WS200 offers:

- Longer fluid life and less employee dermatitis problems because of its built-in biocide.
- Excellent rust protection for equipment and finished parts ... which means less need for special coating of parts.
- Better aluminum compatibility due to its lower pH. As well, workers will find the fluid more agreeable to work with.
- No chemical, toxicological, or irritation hazards are indicated with the use of **WS200 B**, provided accepted practices for plant operation and personal hygiene are followed.



CORROSION PREVENTION SPECIALISTS

UNIT 1 - B-31 BEANT NAGAR, OPP POWER HOUSE, CHANDIGARH ROAD,
LUDHIANA. PUNJAB
UNIT 2 – 29, GAT NO 28/1 KASARAMBOLI, TAL MULSHI, PIRANGUT, PUNE
PHONE: +91 (0) 161 3250700, 3260700 FACSIMILE: +91 161 2678898
EMAIL: info@rustx.net Website : www.rustx.net

TYPICAL PROPERTIES

PRODUCT CODE 407-776 ASTM METHOD

Density at 15°C - Kg/m³ 955 D 1298

Flash Point, Base oil, °C 162 D 92

Viscosity @ 40°C 80

pH (10% Emulsion) 8.7 -

Emulsion stability (500 ppm)

22 hr. oil/cream @ 25°C

None

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Copper Strip @ 40°C 1a D 130

Herbert Rust Test pass -

Freeze/Thaw (40 cycles) No separation -



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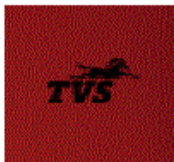
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UNIT 1 - B-31 BEANT NAGAR, OPP POWER HOUSE, CHANDIGARH ROAD, LUDHIANA. PUNJAB
 UNIT 2 - 29, GAT NO 28/1 KASARAMBOLI, TAL MULSHI, PIRANGUT, PUNE
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 EMAIL: info@rustx.net Website : www.rustx.net

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