

JMN SPECIALTIES, INC.

1100 Victory Drive - Westwego, LA 70094
PO Box 189 - Westwego, LA 70096



PRODUCT BULLETIN

SPEC HIB 3633

Alternative to Corfree M1 Corrosion Inhibitor for Ferrous Metals

General Description

SPEC HIB 3633 is a liquid corrosion inhibitor concentrate which has been specifically developed as a genuine alternative to neutralized Corfree® M1. Corfree® M1 is solid product consisting of a mixture of dibasic carboxylic acids that, when neutralized (most commonly with alkanolamines), is an effective corrosion inhibitor for ferrous metals in a variety of metal treatment and metal working applications. By using **SPEC HIB 3633**, customers will not have to reformulate their products and **SPEC HIB 3633** will provide equal or superior performance vs. using neutralized M1.

SPEC HIB 3633 is unique blend of alkanolamine neutralized carboxylic acids that closely matches the original Corfree® blend. **SPEC HIB 3633** is a liquid product which can be easily formulated into customer fluids removing the need for heating and blending of solid corrosion inhibitor components. **SPEC HIB 3633** is provided at a near neutral pH ~7.5 (5% solution) allowing for adjustment by the customer to the required operating pH for specific applications. **SPEC HIB 3633** contains no secondary amines, is nitrite & boron free, has good hard water compatibility and has a low foaming tendency. **SPEC HIB 3633** contains no solvents and shows excellent activity for ferrous metals in IP 287 testing. All components are either fully REACH registered or exempt from registration.

SPEC HIB 3633 is provided at 32% equivalent Corfree® M1 in water neutralized with TEA.

Application

The effective end use concentration for **SPEC HIB 3633** typically ranges from 0.025 – 2.0%.

Physical Properties

Color	Clear, light amber to straw liquid
Odor	Bland
Specific Gravity	1.15
pH	7 - 8
Flash Point	Not Flammable
Solubility	100% Soluble in Water

Corrosion Control Performance

IP 287: Determination of rust prevention characteristics of water mix metal working fluids Cast iron drillings/filter paper method

A Formulation (A) was prepared from Corfree M1 (32%wt) neutralized with triethanolamine and a balance of water. This was tested alongside **SPEC HIB 3633**.

Test time: 2 Hours

Temperature: 22°C

Diluted with synthetic hard water of 200ppm calcium carbonate (0.3449 g/l CaSO₄.2H₂O)

pH: 8.4 - adjustments made with 2-aminoethanol

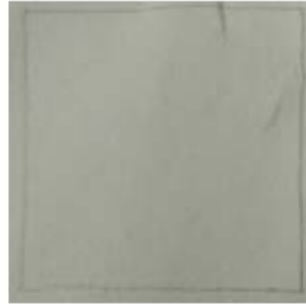
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Phone (504) 341-3749 Fax (504) 341-5868 or E-mail: sales@jmnspecialties.com

Formulation A

SPEC HIB 3633

80:1



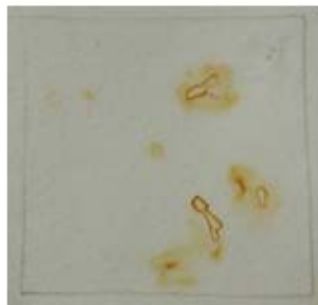
100:1



120:1



140:1



The above results show that **SPEC HIB 3633** affords greater corrosion control to cast iron drillings over that of the neutralized Corfree M1 formulation at pH 8.4.

SPEC HIB 3633 also is proven to control corrosion of other metals such as mild steel, aluminum alloy and copper and gives at least comparable results to that of the equivalent Corfree M1 formulation for mild steel and copper and better results for aluminum alloy.

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Mild Steel

Half immersion testing in 1g/l NaCl solution, 22°C, 144 hours



Aluminium Alloy 1050

Full immersion testing, pH 8, 90°C, 2 hours

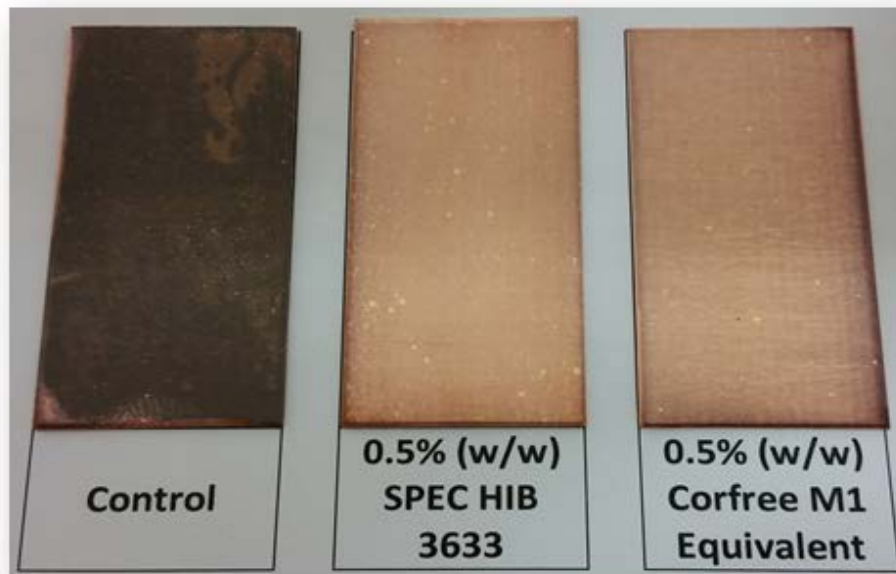


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Copper

Full immersion in 1g/l NaCl solution, 24 hours, 22°C



Treat levels of **SPEC HIB 3633** should be tailored to each individual formulation and is dependent upon the amounts of solid Corfree M1 used currently.

Availability

SPEC HIB 3633 is available in UN approved 5 gallon pails, 55 gallon drums and bulk quantities.

Handling

Observe warning label on containers. Normal precautions for industrial chemicals apply.