

Evaluation Report for Category B, Subcategory 2.1, 2.3, 2.4, 2.6, 3.1 Application

Application Number: 2012-3450
Application: Product chemistry - guarantee, identity and proportion of
formulants, new combination of TGAI's
Product labels - application rate increase
Product: MAQUAT 1010 N-25:12
Registration Number: 31495
Active ingredients (a.i.): Didecyl dimethyl ammonium chloride and Glutaraldehyde
PMRA Document Number: 2361014

Purpose of Application

The purpose of this application was to register a new end-use product MAQUAT 1010 N-25:12 containing a new combination of actives: didecyl dimethyl ammonium chloride and glutaraldehyde, for use as a water treatment microbiocide for drilling fluid systems, oil field water flood systems, packer fluid, holding tanks and injection waters (USC 17).

Chemistry Assessment

MAQUAT 1010 N-25:12 is formulated as a solution containing didecyl dimethyl ammonium chloride at 12.5% and glutaraldehyde at 25.7%. The end-use product has a density of 1.0427 g/mL and a pH of 4.4. The chemistry requirements for MAQUAT 1010 N-25:12 are complete.

Health Assessments

A risk assessment for mixer/loader/applicator (M/L/A) dermal and inhalation exposures as well as post-application inhalation exposure have been conducted for a new commercial end-use product, MAQUAT 1010 N-25:12. When used according to label directions, no human health concerns are expected for both handlers as well as re-entry workers.

MAQUAT 1010 N-25:12 is of moderate acute toxicity in rats via the oral route of exposure and is considered to be moderately acutely toxic via the inhalation route. It was of low acute toxicity in rats via the dermal route ($LD_{50} > 2000$ mg/kg bw) and was not considered to be a sensitizer when tested in guinea pigs using the Buehler method. MAQUAT 1010 N-25:12 is considered to be corrosive to the eyes, skin and mucous membranes.

A food residue assessment was not required for this application.

Environmental Assessment

Didecyl dimethyl ammonium chloride and glutaraldehyde are currently registered for use as water treatment microbiocides for oil field water flood, salt water disposal systems and work over fluids. A review of label indicates that it contains adequate statements to protect the aquatic organisms and the environment from the proposed uses. The new formulation, MAQUAT 1010 N-25:12 with the same actives and uses, is not expected to pose additional environmental concerns.

Value Assessment

Laboratory trials have been carried out using test samples from actual oilfield systems such as water floods, fracture fluids, drilling muds and packer fluids. These samples were treated with various concentrations of MAQUAT 1010 N-25:12 and the results have shown that depending of the use, rates ranging from 10 to 600 ppm of combined active ingredients were required to inhibit bacterial growth. Therefore, the proposed rates for these uses of MAQUAT 1010 N-25:12 were found to have value.

Conclusion

The PMRA has completed an assessment of the information provided and is able to support the registration of the new end-use product, MAQUAT 1010 N-25:12.

References

PMRA No.	Title
2355843	2013, DACO: 10.1, Withdrawal email
2220603	Efficacy Studies Maquat 1010N-25:12, DACO: 10.2.3.2
2220583	Product Identification, DACO: 3.1.1,3.1.2,3.1.3 CBI
2220584	Description of starting materials, DACO: 3.2.1 CBI
2220586	Formulation Process, DACO: 3.2.2 CBI
2220588	Certified Limits, DACO: 3.3.1 CBI
2220590	analytical method, DACO: 3.4.1 CBI
2220591	DACO 3.5 Chem Phys properties and waivers, DACO: 3.5.10,3.5.12,3.5.13,3.5.14,3.5.4,3.5.5,3.5.8 CBI
2220592	DACO 3.5.2-3.5.6-3.5.7-3.5.9-3.5.11 Physicals, DACO: 3.5.11,3.5.2,3.5.6,3.5.9 CBI
2351104	Starting Material MSDSs, DACO: 3.2.1 CBI
2351113	2013, 830.1700: Enforcement Analytical Method, DACO: 3.4.1 CBI
2351114	2012, Physical and Chemical Characteristics of Maquat 1010N 25:12: Storage Stability and Corrosion Characteristics, DACO: 3.5.10,3.5.14 CBI
2220593	2010, Acute Oral Toxicity of Maquat 1010N, DACO: 4.6.1
2220595	2010, Acute Dermal Toxicity Study of Maquat 1010N, DACO: 4.6.2
2220596	2010, Ocular Irritation and Acute Skin Irritation testing waiver, DACO: 4.6.3,4.6.4,4.6.5
2220597	2010, Skin Sensitization Study of Maquat 1010N, DACO: 4.6.6

ISSN: 1911-8082

© Her Majesty the Queen in Right of Canada, represented by the Minister of Public Works and Government Services
Canada 2015

All rights reserved. No part of this information (publication or product) may be reproduced or transmitted in any form or by any means, electronic, mechanical photocopying, recording or otherwise, or stored in a retrieval system, without prior written permission of the Minister of Public Works and Government Services Canada, Ottawa, Ontario K1A 0S5.