

Summary of Eye Irritation Testing/CFR 1500.42 on
Heartland Energy Group, Ltd, Oil Safe AR®
Herein referred to Oil Safe AR®

The Method used in Protocol Design was the Draize method as described in OECD Guidelines for the Testing of Chemicals, Sec. 405, OPPTS 798.4500 Primary Eye Irritation, OPP 81-4 Acute Eye Irritation-Rabbit, and EPA report 540/09-82, 1982.

Six albino rabbits shall be used in accordance with CFR 1500.42. In each animal, the test material shall be placed into one eye of each rabbit. The eyelids shall then gently be held together for one second and then the rabbit shall be released. The grade of ocular reaction is recorded at 1, 24, 48 and 72 hours. The sum of the grade of ocular reaction shall then be added. The primary irritation index for each animal was the sum of the two summary values divided by 6 (i.e. the average of the three readings). The primary irritation score and its standard deviation are the mean value and standard deviation of the primary irritation indices of the three animals.

A 0.1 mL portion of the test article Oil Safe AR® was topically applied to the intact eyes of a group of six rabbits by placing the test material with a sterile dropper into the conjunctival sac of one eye of each rabbit by gently pulling the lower lid away from the eyeball.

The test sites were evaluated at 1, 24, 48 and 72 hours following the exposure period. The test article Oil Safe AR® showed no ocular reaction on all rabbits at 24 hours after the exposure period. At 1 hour after exposure, no ulcerations or opacity were observed. A slight redness was apparent in 3 of the 6 rabbits. At 24 hours after the exposure, no ulcerations or opacity were observed. The 3 rabbits that showed a slight redness had essentially recovered 100% at this testing interval. At 48 hours after the exposure, no ulcerations or opacity were observed. At 72 hours after the exposures, no ulcerations or opacity were observed.

NOTE: Oil Safe AR® was applied at pure, undiluted strength.

Classification of Primary Irritation Scores:

0-7.0	Non-Irritant
7.1-15.0	Practically Non-Irritating
15.1-25.0	Slightly Irritating
25.1-50.0	Moderately Irritating
50.1-110.0	Severely Irritating/Corrosive

Based on these results, the test article was classified as follows:

Primary Irritation Score 12.3 ± 0.1

Classification Practically Non-Irritating

Based on the above findings, the test article Oil Safe AR® is not classified as Hazardous according to the US DOT and the Canadian Transportation of Dangerous Goods Act.

References:

- (1) Buehler, E.V. and Newmann, E.A.A. comparison of Eye Irritation in Monkeys and Rabbits. *Toxicology and Applied Pharmacology* 6:701-710 (1964)
- (2) Draize, J.H. et al. Methods for the study of irritation and toxicity of substances applied topically to the skin and mucous membranes. *Journal of Pharmacology and Experimental Therapeutics*. 83-377-390 (1944)

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