4004

PPSC

PETROLEUM PRODUCT STEWARDSHIP COUNCIL

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8EHQ - 0298 - 14117

8EHQ-98-14117

February 4, 1998

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RE: TSCA 8(e) Submission for Naphtha (petroleum) light straight run
CAS # 64741-46-4

Dear Sir:

The Petroleum Product Stewardship Council (PPSC), a consortium formed to conduct voluntary testing of petroleum refinery streams, is submitting this notice pursuant to Section 8(e) of the Toxic Substances Control Act (TSCA). This submittal relates to Naphtha (petroleum) light straight run (LSRN) which is on the TSCA Inventory of Chemical Substances. The principal use of LSRN is as a gasoline blending stream.

In the acute aquatic toxicity studies included in this report, the measured concentrations of summed analytes in the water accommodated fractions (WAF) of LSRN which caused organism toxicity were below 1 mg/l. The loading rates, however, were significantly higher than 1 mg/l. Since we are uncertain if EPA uses the loading rate or measured concentrations of selected components in aquatic studies to determine reportability of complex mixtures under TSCA 8(e), we are advising EPA of these preliminary results.

The studies were conducted in a closed system to maintain stable test concentrations by minimizing the loss of volatile hydrocarbons. All studies, with the exception of the algae test, were conducted using daily renewals of freshly prepared WAF. Testing volatile hydrocarbon mixtures of limited component water solubility requires several adaptations to the typical static-renewal test methods. For example, to achieve equilibrium in the WAF, test preparations were stirred for 24 hours in closed containers of minimal headspace before WAFs were siphoned off for use in aquatic toxicity studies.

The results of audited draft reports are summarized below:

Test Organism	EC/LC50 in mg/L: Nominal WAF Loading Rate	Measured Concentration*
Freshwater:		
Daphnia	18	0.66
Fathead Minnow	15	0.69
Freshwater Algae	6.4	0.26
Saltwater:		
Mysid Shrimp	10	0.30
Silverside Minnow	29	0.76

* Measured concentrations are the quantified sum of the following LSRN components measured by purge-and trap GC/FID; 2-methylpentane, cyclohexane, benzene, toluene, ethylbenzene, and m, o, and p-xylenes.

Although all the measured concentration EC/LC50s were below 1.0 mg/L, all their corresponding EC/LC50s based on the WAF loading rates of whole LSRN product were clearly above 1.0 mg/l. These findings suggest there is an adequate margin of safety in terms of the amount of whole LSRN product required to be in contact with water to produce toxicity at measured hydrocarbon exposure levels below 1.0 mg/L. Testing with open container systems demonstrated even less toxicity.

The WAF loading rate concept enables test results of complex mixtures, like LSRN, to be compared equally with more water soluble chemicals or mixtures. The substances can be compared on the basis of the amount of whole product that must be in contact with test water at some stage during test medium preparation in order to bring about the observed effect (Girling, et. al., 1994).

When the final reports from these studies are available, we will forward a copy to EPA. If you have any questions about this submission, please contact Paula Podhasky at (202) 721 - 4156.

Sincerely,

E. N. Ladov, Ph.D.
Chairman, Petroleum Product Stewardship Council

Reference:
Girling, A. E., Whale, G. F. and Adema, D. M. M. 1994. A Guideline Supplement for Determining the Aquatic Toxicity of Poorly Water-Soluble Complex Mixtures Using Water Accommodated Fractions. *Chemosphere* 29(12): 2645-2649.

This report is being made in compliance with Section 8(e) of the Toxic Substances Control Act (15 U.S.C. 2607), pursuant to our understanding of the Statement of Interpretation and Enforcement Policy (43 Fed. Reg. 11110 et.seq.). It has been compiled based on information available within the time period given. While we believe the tests reported were properly performed, no representation can be made as to their accuracy of content. The consortium and individual signator also reserve the right to supplement any or all of the data contained herein and to revise or amend any conclusion drawn therefrom.

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14117	a	0298		64741464	HIGH	NS	NS

CHEMNAME

Naphtha (petroleum) light straight run, renewal

PHYSTATE

NS

ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS
Water flea, Daphnia sp.	24h	EC50		0.66	mg/l

MELTINGPT

NS

COMMENTS

measured

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14117	a	0298		64741464	HIGH	NS	NS

CHEMNAME

Naphtha (petroleum) light straight run, renewal

PHYSTATE

NS

ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS
Fathead minnow, P. promelas	24h	EC50		0.69	mg/l

MELTINGPT

NS

COMMENTS

measured

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14117	a	0298		64741464	HIGH	NS	NS

CHEMNAME

Naphtha (petroleum) light straight run, static

PHYSTATE

NS

ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS
Freshwater algae	24h	EC50		0.26	mg/l

MELTINGPT

NS

COMMENTS

measured

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14117	a	0298		64741464	HIGH	NS	NS

CHEMNAME

Naphtha (petroleum) light straight run, renewal

PHYSTATE

NS

ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS
Mysid shrimp, M. bahia	24h	EC50		0.30	mg/l

MELTINGPT

NS

COMMENTS

measured

ENTRY FORM

CAPNUM	LTR	DATE	CBI	CASNO	CONCERN	AI	SOLUBILITY
14117	a	0298		64741464	HIGH	NS	NS

CHEMNAME

Naphtha (petroleum) light straight run, renewal

PHYSTATE

NS

MELTINGPT

NS

ORGANISM	DURATION	ENDPOINT	CODE	TOXVALUE	UNITS
Silverside minnow	24h	EC50		0.76	mg/l

COMMENTS

measured