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Mr. Oscar Hernandez
Administrator
US Environmental Protection Agency
P.O. Box 1473
Merrifield, VA 22116
Attention: Chemical Right-to-Know Program

Re: HPV Submission - Neo Acids C5-C28 Category

Dr. Mr. Hernandez:

Please find attached our response to the Agency's questions regarding our HPV submission for the Neo Acids C5-C28 category.

Also, as appropriate, we have corrected our test plan and robust summaries. Revised copies of these are being provided as well.

If you have additional technical questions, please contact Dr. Laura Keller @ 281-870-6501 or laura.h.keller@exxonmobil.com.

Yours sincerely,

N.J. Sarginson

Global Intermediates Product Stewardship and Regulatory Affairs Manager

Responses to EPA's Comments:

1. Category Definition

We do not routinely determine the composition of Neoacid 913 and 928. However, based on analyses in the past, the composition of Neoacid 913 can be estimated at ~ 87% C9 isomers, ~9% C13 isomers, with remaining isomers within the range indicated.

Neoacid 928 is defined as "a complex combination of fatty acids obtained by the hydrolysis of the boron trifluoride esters of neoacids produced by the carboxylation and polymerization of isobutylene and nonene. It consists primarily of fatty acids having carbon numbers predominantly in the range of C9 through C28 and boiling in the range of approximately 225 degree C to 387 degrees C." No other compositional information is available on this material.

The CAS number for Neodecanoic acid is 26896-20-8. Both the test plan and the robust summaries have been updated to reflect this change.

2. Category Justification

Based on the structural similarity of the 2,2-dimethylpropanoic acid, methyl ester to 2,2-dimethylpropanoic acid, we do not feel that a separate submission for 2,2-dimethylpropanoic acid, methyl ester is justified. The methyl group is expected to be readily hydrolyzable by endogenous esterases. Removal of the methyl ester group yields the parent acid, 2,2-dimethylpropanoic acid and methanol.

3. Physicochemical Properties and Environmental Fate

Table 2 has been updated to include measured values (where available) and/or footnotes or references as to the source of the available information. Several of the measured values (particularly those for neopentanoic acid) were supplied by the experimental database available as part of the EPIWIN software Version 3.04. As stated in our original submission, robust summaries for the phys/chem endpoints will be supplied when available.

The C9-C13 fatty acids and the C9-C28 fatty acids (CAS 68938-07-8 and 72480-45-6) are complex mixtures, whose composition may vary. Therefore, the submitter believes that for the sponsored products, a range of physicochemical values for select endpoints is more technically representative for the sponsored products than including values for the major components.

Photodegradation

A robust summary, in the form of a technical discussion, will be prepared for the category of substances. The potential for photolysis will be driven by the carboxyl group present in all the constituents, and therefore the category discussion will be applicable to the category as a whole.

Transport and Distribution (Fugacity)

EPA prefers to use a Level III fugacity model.

We intend, and have proposed, to develop partitioning data using a Level I model. Emission data are insufficient to obtain reliable results using the Level III model. Also, Level III requires data that are not available.

4. Health Effects

Repeat-dose Toxicity

Given the low degree of toxicity for these materials in acute and developmental/reproductive studies, we do not intend to conduct subchronic studies at this time.

Reproductive/Developmental Effects

ExxonMobil submitted two reports on the reproductive and developmental effects of neoacids. In addition, we submitted robust summaries on two related acids - isooctanoic and isononanoic acid. By EPA's own SAR methods, neither category of acids produce reproductive effects because of the size of the methyl groups. Given these data, we do not propose additional developmental and reproductive testing as part of the HPV program.

Genotoxicity Data

It has come to our attention that another producer of these materials has genetic toxicology data available. These data include both mutagenicity and chromosomal aberration studies on some members of the category. Pending our receipt and review of these studies, we will re-evaluate the need to do genetic toxicology testing. However, we do not anticipate that any additional genotoxicity testing will be required. We will submit additional robust summaries once this information is available to us.

Comments on Robust Summaries

EPA's guidelines request that robust summaries "provide at a minimum qualitative descriptions of elements where dose effect related observations were seen" including body weight. The originally submitted summaries included qualitative descriptions of body weight changes where statistically significant changes were observed. However, for clarity, we have added quantitative body weight data where statistically significant changes were observed between control and treated groups.

* The citation for the neodecanoic acid reproductive study has been corrected in the test plan.

* The results of particle size determinations have been added to the robust summary for the acute aerosol inhalation study for Neodecanoic acid.

5. Ecological Effects

EPA agrees with the proposed acute testing plan, but suggests that we need to state that for fish, invertebrates, and algal studies, the data needs to be identified as coming from a C7 branched and linear aliphatic acid for the C6-C8 neoacid. The test plan has been updated accordingly.

EPA also requested that a chronic invertebrate test be conducted on a member of the higher-carbon neoacids because of their log K_{ow} of >4.2 . We propose to await the outcome of the additional acute testing and additional information on the availability of data from other suppliers before deciding whether this testing is appropriate.

Comments on Robust Summaries

Test chemical purity is provided where available. All test materials are commercial grade.

Robust summaries for acute fish toxicity have been updated to include data on water hardness and dissolved oxygen content.