

Response to EPA’s Hazard Characterization of the Naphthenic Acids Category
The American Petroleum Institute Petroleum HPV Testing Group
June 17, 2013

The following comments are in response to EPA’s Hazard Characterization (HC) for the Naphthenic Acids Category (U.S. EPA, 2012). This Category was sponsored by the American Petroleum Institute (API) Petroleum HPV Testing Group (Testing Group) as part of EPA’s HPV Chemical Challenge Program (www.petroleumhpv.org).

Below is EPA’s generic table of content for all the HPV Hazard Characterizations they have prepared, including Naphthenic Acids. The Testing Group’s comments are found on the page numbers indicated below.

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Summary

The Testing Group's May 16, 2012 Category Assessment Document (CAD) and Robust Summaries provide sufficient information to address all the SIDS requirements for the Naphthenic Acids Category.

The EPA hazard characterization for several Petroleum HPV Categories including Naphthenic Acids, refers to the category members as complex mixtures when in fact they are UVCB substances (HC page 3, 4).

Substances on the US TSCA Inventory are divided into two classes for ease of identification (EPA 1995). Class 1 substances are those single compounds composed of molecules with particular atoms arranged in a definite, known structure. However, many commercial substances that are subject to TSCA are not Class 1 substances, because they have unknown or variable compositions or are composed of a complex combination of different molecules. These are designated Class 2 substances. Class 2 includes substances that have no definite molecular formula representation and either partial structural diagrams or no structural diagrams. These are the "UVCB" substances (Unknown or Variable compositions, Complex reaction products and Biological materials). An example of this kind of substance is given below.

CAS Number: 64754-89-8

CAS Name: Naphthenic acids, petroleum, crude

CAS Definition: A complex combination of compounds, predominantly naturally occurring organic acids, obtained from petroleum fractions by saponification and acidification. It consists predominantly of compounds which contain carboxylic acid functional groups and five- to six-member naphthenic rings in their molecular structures. Phenolic compounds and acidic sulfur compounds may also be present

Petroleum substances are subject to nomenclature rules developed jointly by the U.S. EPA and the American Petroleum Institute (EPA, 1995b). In that guidance document, EPA adopts the definitions of petroleum process stream terms provided in API's published reference document Petroleum Stream Terms Included in the Chemical Substance Inventory under TSCA (1983, reprinted in 1985). The Stream Terms definitions include the CAS definition and registry number, the source of the substance and process (i.e., last refining step), short name, indication of carbon number, and indication of distillation range (or other appropriate characteristic). Therefore all members of the Naphthenic Acids Category are UVCB substances, not mixtures, under EPA's nomenclature guidance.

3. Human Health Hazard

EPA failed to take notice of the Category Assessment Document and Robust Summaries submitted by the Testing Group (<http://www.petroleumhpv.org/pages/reclaimedsubstances.html>). They are included with this response. The data provided fully address the endpoints encompassed by the HPV program and provide all the information necessary to characterize the hazards of these substances.

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4. Hazard to the Environment

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References cited in this response to EPA's HC for the Naphthenic Acids Category

Naphthenic Acids Category Analysis and Hazard Characterization, May 14, 2012.

<http://www.petroleumhvp.org/pages/reclaimedsubstances.html>

Naphthenic Acids Category Robust Summaries, May 15, 2012.

<http://www.petroleumhvp.org/pages/reclaimedsubstances.html>

Toxic Substances Control Act Inventory Representation for Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials: UVCB Substances (March 29, 1995a); available from

<http://www.epa.gov/oppt/newchems/pubs/uvcb.txt>

Toxic Substances Control Act Inventory Representation for Certain Chemical Substances containing Varying Carbon Chain Lengths (Alkyl Ranges Using the Cx-y Notation) (March 29, 1995b); available from: <http://www.epa.gov/oppt/newchems/pubs/alkyl-rg.txt>

U.S. EPA (2012). Screening Level Hazard Characterization of High Production Volume Chemicals; Naphthenic Acids Category.

http://www.epa.gov/chemrtk/hpvis/hazchar/Category_%20Naphthenic%20Acids_HC_Dec%202012.pdf