



Product Stewardship Summary Spent Caustic (from Normal Alpha Olefins unit)

The product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of all health and safety information. Additional information on the chemical is available through the applicable Material Safety Data Sheet which must be consulted before use of the chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.

Chemical identity:

Spent Caustic is a byproduct of alpha olefin production at the Cedar Bayou Plant in Texas. The main components are water, sodium hydroxide, sodium aluminate, sodium carbonate, and hydrocarbons (C6-C18 alpha olefins).

Product Uses:

Spent Caustic is reacted with water and aluminum hydrate to produce sodium aluminate, alumina, and other products, which are sold to paper mills and catalyst manufacturers. There is no disposal of Spent Caustic by Chevron Phillips Chemical.

Physical/chemical properties:

Spent Caustic is a cloudy liquid which may contain an oily film (top phase) and a heavy (bottom) phase of brownish gray sludge. Spent Caustic, without the floating layer of hydrocarbons, is not classified by the U.S. Department of Transportation or Occupational Health and Safety Administration (OSHA) as flammable or combustible. However, this product may contain a floating layer of hydrocarbons, (C6 – C18 alpha olefins), which may be present in the primary collection tank rendering the Spent Caustic to be classified by OSHA as a flammable liquid. Maintenance of special handling and storage procedures is required.

Health Information:

Exposures to Spent Caustic are expected to cause permanent damage to skin and eyes; ingestion may cause severe irritation and permanent damage to the mouth, throat, and stomach, and may be fatal. Breathing of mists of this material may cause respiratory irritation and repeated and prolonged exposure may cause lung damage. Excessive, repeated or prolonged breathing of the more volatile olefins present in the floating layer of hydrocarbons may cause central nervous system effects. Spent Caustic is not expected to cause reproductive or developmental toxicity, genetic toxicity, or cancer.

Environmental Information:

Based on available data for the components, Spent Caustic is expected to be toxic to aquatic organisms in the immediate vicinity of release to a body of water, due to an increase in pH and to the presence of aluminum. Spent Caustic is not expected to bioconcentrate in fish or other aquatic organisms. If Spent Caustic is released to water or soil, components are not likely to volatilize to the atmosphere, but will partition primarily to the sediment or remain in the soil. Fate in the soil and sediment will depend on the amount released and the composition of the receiving medium. Depending on the properties of the soil, some components may display high mobility. Aluminum cannot be destroyed in the environment. Most aluminum will ultimately end up in the soil or sediment, where, under acidic conditions, aluminum may accumulate. The lower chain alpha olefins in the floating hydrocarbon layer will rapidly volatilize from water or soil to the atmosphere where they will degrade quickly. The higher chain alpha olefins may partition to the soil and sediment where degradation will occur, but at a slower rate. Exposure of the environment to Spent Caustic is expected to be very low.

Exposure Potential:

Exposure potential is considered to be low; however, based on the uses/applications of Spent Caustic, the public could possibly experience exposure to the product as stated below:

- *Workplace use:* This refers to potential exposure to Spent Caustic to persons in a manufacturing facility or through evaporation in various industrial applications. Although Spent Caustic is produced in closed systems, it is common practice to use personal protective equipment.

Spent Caustic is manufactured and transported in closed systems, which limits worker exposure; however, there is some potential for exposure to workers during loading and unloading operations, collection of samples for analysis, visual inspections of the loaded railcars to ensure that the shipment contains no floating hydrocarbons, and removal of the hydrocarbon layer. Since workers at Chevron Phillips Chemical's and the customer's facilities utilize proper protective safety equipment when handling the Spent Caustic, potential exposures to the material are expected to be low.

- *Consumer use:* There is no direct consumer use of Spent Caustic. Non-occupational exposure to Spent Caustic is expected to be limited to exposure following inadvertent release of the product.
- *Potential environmental release:* Since Spent Caustic is routinely consumed internally, is transported a short distance, and is handled and stored in closed systems, potential exposure of the environment to Spent Caustic is expected to be very low. Chevron Phillips Chemical is committed to operating in an environmentally responsible manner and has adopted the American Chemistry Council's Responsible Care® initiative.

Risk Management:

Chevron Phillips Chemical is committed to Product Stewardship and doing business responsibly. We endeavor to provide sufficient information for the safe use and handling of all our products.

Finally, when handling Spent Caustic product, make sure to consult the relevant product Material Safety Data Sheet and review applicable regulatory guidelines and requirements, including, but not limited, to OSHA guidelines.

Regulatory Information:

Regulations exist that govern the manufacture, sale, transportation, use and/or disposal of Spent Caustic product. These regulations may vary by city, state, country or geographic region. Additional helpful information may be found by consulting the relevant product Material Safety Data Sheet.

Sources of Additional Information:

- Organization for Economic Cooperation and Development (OECD) - eChemPortal web-based search tool (use applicable CAS No): <http://webnet3.oecd.org/echemportal/>
- European Chemical Substances Information System (ESIS) <http://ecb.jrc.it/esis/>
- Agency for Toxic Substances and Disease Registry (ATSDR) Toxicological Profiles: <http://www.atsdr.cdc.gov/toxprofiles/index.asp>
- Material Safety Data Sheet

Conclusion:

Spent Caustic contains components that are classified as hazardous chemicals. Efforts shall be taken to minimize eye, dermal and inhalation exposures to this product by adhering to safe handling procedures for designated applications and uses. Also, appropriate personal protective equipment practices and labeling, storage, and transportation procedures shall be followed. Further, the relevant product Material Safety Data Sheets and applicable regulatory guidelines and requirements, including, but not limited to, OSHA guidelines, must be consulted prior to the use or handling of this product.

Contact Information:

<http://www.cpchem.com/>

Date: August 18, 2010