

NEODOL™ ALCOHOLS Product Stewardship Summary

Generic Formula for NEODOL Alcohols

$C_nH_{(2n+1)}OH$ (or, 'ROH')

What are NEODOL alcohols?

NEODOL alcohols are precursor molecules for surfactants. NEODOL-based surfactants are used in many of the most respected consumer detergents, cleaning products and personal care products worldwide.

NEODOL alcohols are manufactured using the Shell hydroformylation (SHF) process from olefins produced from ethylene using the Shell Higher Olefin Process (SHOP).

NEODOL alcohols are high purity, high linearity primary alcohols that typically contain 75-85% by weight normal alcohols. They contain both even and odd numbered carbon chains, offering excellent product qualities for various applications.

Shell chemicals companies offer a wide variety of alcohols. The principal alcohol grades are NEODOL 91 (C9-C11 alcohols), NEODOL 23 (C12-13 alcohols), NEODOL 25 (C12-15 alcohols), NEODOL 45 (C14-15 alcohols), NEODOL 135 (C11-13-15 alcohols) and NEODOL 67 (C16-17 alcohols).

How are NEODOL alcohols used?

NEODOL alcohols are found in a wide variety of everyday products. They are formulated into laundry powders and liquids, dishwashing liquid and hard surface cleaners. They are also used in the manufacture of a variety of industrial chemicals and in lubricating oil additives.

NEODOL alcohols are often derivatised before use in formulations. The ease of ethoxylation and sulfation by conventional means makes the derivatives suitable for a broad spectrum of surfactant applications.

Health, Safety and Environmental considerations

NEODOL alcohols are not flammable. These materials will float on water.

Generally, NEODOL alcohols are slightly to moderately irritating to the eyes and skin, although NEODOL 79 is classified as a skin and eye irritant and NEODOL 135 is classified as a skin irritant.

NEODOL alcohols show low oral, skin and respiratory toxicity following a single exposure. They have no skin sensitising properties and skin contact is not expected to induce an allergic response. Repeated oral or skin exposure to high doses does not induce significant toxicity. These materials have not shown adverse effects on reproductive performance or growth and development of the fetus. Prolonged or repeated skin contact with undiluted alcohols may lead to defatting of the skin and ultimately cause dermatitis. They have been shown to be non-mutagenic. NEODOL alcohols are not listed as carcinogens by international or national organisations.

NEODOL alcohols are harmful to aquatic organisms, except for NEODOL 23 and NEODOL 25, which are very toxic to aquatic organisms. NEODOL alcohols are biodegradable, and are not expected to bioaccumulate significantly.

The American Conference of Governmental Industrial Hygienists (ACGIH) has not established recommended exposure limits for these materials.

Storing and transporting NEODOL alcohols

NEODOL alcohols should be stored in stainless steel, epoxy resin or polyester lined tanks; aluminum and copper should be avoided. These products are transported by road, rail and sea.

Risk Characterization Summary

Risks associated with exposure to this product have been evaluated for the following “chain-of-commerce” activities: manufacture, storage, product transfer, transportation, and customers/markets. It is manufactured, stored and transported to customers in closed systems. Depending on the customer, end uses may vary from use as an intermediate for the manufacture other chemicals, commercial products, or certain formulated consumer products. Proper equipment design and handling procedures maintain low risk from exposure where used as an intermediate. Exposures may be higher in commercial and consumer applications. To minimize risk, additional controls, such as, special handling procedures and protective packaging, are implemented.

This 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 health and safety information. Additional information is available through the chemical's applicable Material Safety Data Sheet, which should be consulted before use of the chemical. This product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.