Global Product Strategy

Product Stewardship Summary

Quaternary Ammonium Compounds

Chemical Identity and Synonyms
- Quaternary Ammonium Compounds
- Quats
- The chemical identity of this material is considered proprietary information

Physical Chemical Properties
- Clear yellow liquid
- Amine odor
- Soluble in water and alcohols

Nalco Products
- Nalco 01VD109, DVE4D004, DVE4D017, 02VD066 (This list only represents products with high sales volumes that contain this specific material).

Product Uses
- A primary use of this chemistry is as a corrosion filmer. A filmer forms a protective layer on metal equipment that repels corrosive attack by acids.
- These chemicals are also used to scavenge hydrogen sulfide (H₂S) in refineries.
- Nalco primarily uses these quats in oil and gas field applications and in refineries. Nalco does not use these chemicals in products intended for use by consumers or the general public.
- Quats are also widely used antimicrobials that are formulated into countless products used in residential, commercial, industrial, institutional and industrial settings. These applications are regulated by the EPA under FIFRA (Federal Insecticide, Fungicide and Rodenticide Act).
- Antimicrobial applications include use in swimming pools, spas, wood treatment, medical institutions, food handling and processing, agriculture, restaurants, disinfecting products, sanitizers and many others.

Chemical Related Health Information
- These quats are corrosive. Tissue damage may occur if material is placed onto skin, into eyes or inhaled. They are harmful if ingested.
- They do not cause damage to genetic material (DNA).
• These chemicals do not damage the nervous system.
• These chemicals are not carcinogenic in animal studies.
• There is no evidence that these chemicals harm the unborn child.

Chemical Related Environmental Information
• Quats of this type are very highly toxic to aquatic invertebrates
• These chemicals are highly toxic to fish.
• These chemicals are moderately toxic to birds.
• Presence of organic material in the water such as humic acids, reduces the toxicity of quats to aquatic animals. The quats bind with humic acids making the quats less bioavailable to the animals.
• When present at concentrations that are not biocidal, these quats are biodegradable by microorganisms.
• U.S. EPA software does not predict that these types of quats will bioaccumulate.

Chemical Exposure Potential
• Engineering controls are in place at Nalco facilities to reduce exposures of this material to employees, stakeholders, and the environment.
• The material is not released to the air.
• The packaged products are warehoused and any spills in the warehouse that are not immediately contained, naturally drain to our process water waste treatment. The spilled material is then segregated to different tanks for disposal or treatment, depending on the severity of the spill. All treated wastewater is monitored and analyzed continually for compliance with state and local regulation.
• Nalco uses these materials in products intended for industrial applications. Potential exposure to Nalco products is limited to those individuals working at the customer’s facility or site.
• In order to prevent skin exposures to this material it is suggested that workers wear a chemical apron or full slicker suit, along with impervious gloves and boots.
• In order to prevent eye exposures to this material, a face shield with chemical splash goggles are recommended.

Chemical Risk Mitigation
• Risk is measured as a function of hazard and exposure. These chemicals have high hazards for both humans and the environment based on the corrosive nature of the material and its high toxicity in the aquatic environment.
• When handled properly, utilizing appropriate personal protection equipment (PPE), potential exposure to this material is significantly reduced.
Under normal conditions of anticipated use and when used with appropriate handling procedures and PPE, the overall potential risk of this material to human health and the environment is low.

As with all products, care must be taken to prevent its release to the environment. In the event of a chemical release or spill Nalco has procedures in place that will reduce the potential human and/or environmental exposure through containment and remediation efforts.

**Legal Statements**

This product stewardship summary provides only basic health and safety information for general public use. Product stewardship summaries are not to be used in lieu of any regulatory or legal documentation and are not to be substituted for any right-to-know notifications.