

CRITICAL CHEMISTRIES UNDER TSCA REVIEW

Health and Medical Care Applications



1,3-Butadiene - 1,3-Butadiene is a chemical “building block” essential in the production of polymers. The function of the butadiene is to give these polymers the flexibility, stretchiness and abrasion resistance that permits them to form seals in gaskets used in pharmaceutical drug delivery devices such as asthma inhalers. The kind of butadiene polymer used to make nitrile exam gloves is non-allergenic and provides resistance to lubricants so that they maintain their integrity.

1,4-Dioxane - 1,4-Dioxane is used to dehydrate tissue and prepare slides for microscopy. Those slides may be used in medical research laboratories to view samples and objects for analysis. 1,4-Dioxane can also be used as a purifying agent in pharmaceutical production.

Diisononyl phthalate (DINP) and diisodecyl phthalate (DIDP) - DINP and DIDP are chemical compounds that prevents corrosion, offers durability, flexibility, heat resistance and electrical resistivity for wire and cable in electronics. DINP and DIDP are used in various medical settings such as gloves, shoes and other Personal Protective Equipment (PPE) for healthcare professionals, and medical tubing.

Formaldehyde - Formaldehyde-based chemistry has a long history of safe use in the manufacture of vaccines, anti-infective drugs and hard-gel capsules. For example, formaldehyde is used to inactivate viruses, so they don't cause disease, such as the influenza virus in making the influenza vaccine.

Methylene chloride - Methylene chloride is used to thoroughly sanitize medical equipment without causing corrosion or damage to heat-sensitive parts. In medical laboratories and pharmaceutical development, methylene chloride is used to extract chemicals from plants or foods for medicine such as steroids, antibiotics and vitamins.

N-Methyl-2-pyrrolidone (NMP) - NMP is an essential solvent in manufacturing the electrode binder of most lithium-ion batteries necessary for medical devices.

Octamethylcyclotetrasiloxane (D4) - D4 is primarily used as an intermediate or basic raw material in the production of silicone rubbers, gels and resins. D4 is resistant to bacterial growth, reduces the risk of infections, is easy to sterilize and is an excellent choice for sensitive medical applications such as topical pharmaceuticals, respiratory tubing and medical prosthetics. D4 use in prosthetics and joints offers patient comfort and safety and provides durability. D4 retains its shape and structure, and closely resembles the texture and consistency of human skin. Additional medical and personal care applications include dental bridges, scar gel, pacemakers, medical devices, hair and skin care treatments, cosmetics, sunscreens, deodorants and antiperspirants.

Perchloroethylene (Perc) - Perchloroethylene is used as a raw material in the production of propellants in pharmaceutical aerosols for metered-dose devices such as hand-held dry powder inhalers used to administer asthma medications.

Tetrabromobisphenol A (TBBPA) - TBBPA is a reactive flame retardant in epoxy resins for printed circuit boards used in a wide range of electronic components including computers and patient monitors.

Triphenyl phosphite (TPP) - TPP is used as a plasticizer and flame retardant in upholstery, electronics and adhesives. TPP is also used as a flame retardant in lithium-ion batteries in medical devices and equipment. Incorporating flame retardants into the material fillings and fibers used in furnishings and upholstery helps provide individuals with an extra layer of fire protection.

» These critical chemistries are undergoing risk evaluation under the Toxic Substances Control Act (TSCA).

» While these chemistries are used for sanitizing or prepping medical equipment or in the manufacture of pharmaceuticals or medical devices, this does not mean these products have any unsafe levels – or even any levels – of chemicals remaining on or within the finished product.

