Detrex®
CHEMICALS DIVISION

October 29, 2024

Subject: Radionuclide

To whom it may concern,

Detrex Hydrochloric acid (HCl) produced at the Ashtabula facility is synthesized through a direct synthesis method, which involves the reaction between hydrogen gas (H2) and chlorine gas (Cl2). Liquid Hydrogen is vaporized into a gas and simultaneously fed into graphite reaction vessel with Chlorine gas. The two gases react, producing a high concentration gaseous mixture of hydrogen chloride. This mixture is dissolved into high purity water to produce hydrochloric acid. The generated hydrochloric acid solution is then diluted to strength by the addition of additional high purity water as needed to meet specification

Detrex Ashtabula, OH facility receives its source water for HCl production from the local municipality and pre-treats all water used in production and blending of HCl with a state-of-the-art RO water treatment plant. The Detrex RO water processing system has been designed and tested to ensure it consistently produces ultra-high purity water meeting or exceeding the highest water quality standards. The water system's output is periodically tested by 3rd party laboratories to verify its on-going quality.

The direct synthesis of hydrochloric acid can be represented by the following balanced chemical equation:
$H_2 + Cl_2 \rightarrow 2HCl$

The FDA defines a radionuclide as a substance that emits nuclear particles or photons due to the spontaneous disintegration of unstable nuclei. The FDA also defines a radiopharmaceutical as a drug that contains a radionuclide and is used to treat cancer or relieve tumor-related symptoms. Radionuclides are not intentionally added during the manufacture of Detrex Hydrochloric Acid products, nor are they used during the storage, analysis, or packaging of our products.

While Detrex does not test for the presence of Radionuclides we have no reason to suspect any are present in any in our Hydrochloric Acid.

Sincerely,

Dave Morgan

Dave Morgan
Global Product Manager, Hydrochloric Acid
Detrex Chemicals

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