



October 29, 2024

Subject: Viral Safety

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:
$$\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$$

Hydrochloric Acid products manufactured by Detrex contains no biological material. The precursor materials used by Detrex do not contain any items from biological or human origins. In addition, due to the physical properties of Hydrochloric Acid, material such as bacteria, viruses, or toxins cannot survive exposure to our products.

While we do not routinely test for viruses, to the best of our knowledge we have no reason to suspect they may exist in our Hydrochloric Acid Products.

Sincerely,

A handwritten signature in black ink that reads "Dave Morgan". The signature is written in a cursive style.

Dave Morgan
Global Product Manager, Hydrochloric Acid
Detrex Chemicals