

Hydrofluoric Acid As-Low Content

This document provides a brief description of Hydrofluoric Acid As-Low Content [As = Arsenic], its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS Corporation safety data sheet.

Identification

Product Name:	Hydrofluoric Acid As-Low Content
Chemical Name:	Hydrofluoric acid
Synonym(s):	Anhydrous hydrofluoric acid Hydrogen fluoride
CAS Number:	7664-39-3

Description

Overview: Hydrofluoric Acid As-Low Content is a colorless gas or fuming liquid at ambient temperatures. The chemical has a strong, pungent odor, and is sold by LANXESS in liquid form.

Uses: Hydrofluoric Acid As-Low Content is sold by LANXESS for use as a process regulator or intermediate in the production of other chemicals. The chemical is also used as an etching agent for glass, as a rust remover, as an industrial cleaner for glass, concrete and other surfaces, and as a pickling agent for stainless steel and other metals.

Properties:

Melting Point:	-83°C (-117.4°F)
Boiling Point:	19 to 20 °C (1013 hPa)
Solubility in Water:	Miscible

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture, at bulk unloading, storage and staging areas and in operations where Hydrofluoric Acid As-Low Content is used as a catalyst, intermediate or agent. A much lower potential for exposure exists in facilities using Hydrofluoric Acid As-Low Content in closed manufacturing processes by trained personnel.

Employee Training

Workers handling Hydrofluoric Acid As-Low Content should be trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. A NIOSH approved air-purifying respirator with HF cartridges is required if inhalation of vapors above the exposure limit is possible. For increased protection, wear a NIOSH approved, positive pressure full face-piece self-contained breathing apparatus or air line equipped with NIOSH approved self-contained breathing apparatus. LANXESS also recommends tight fitting chemical goggles (non-vented), face shield, permeation resistant gloves, Saranex 23P coated Tyvek coverall or equivalent, hard hat with brim and rubber boots be worn when handling Hydrofluoric Acid As-Low Content. For increased protection, use a supplied air totally encapsulating HF resistant suit.

Consumer Exposure

LANXESS Corporation does not sell Hydrofluoric Acid As-Low Content to the general public.

Short-Term Health Effects

Hydrofluoric Acid As-Low Content is highly corrosive to human tissues. Exposure to sufficient quantities of the chemical through inhalation, ingestion or dermal contact may be fatal.

Symptoms of eye contact include redness, tearing, swelling and burning. Permanent eye damage may occur. Skin contact may cause redness, itching, swelling and burning. Permanent skin damage may occur. Fluoride ions in this chemical readily penetrate human skin and may destroy soft tissues and decalcify bone. This process can continue for several days if not treated. Systemic poisoning can also occur with symptoms of cardiac arrhythmia (an irregular heart beat) and metabolic imbalances. Symptoms of pain or burning due to skin contact with lower concentrations (under 50%) of the chemical may be delayed for up to 24 hours after exposure.

Inhalation of Hydrofluoric Acid As-Low Content may cause pulmonary edema with symptoms of breathing difficulty and tightness of chest. Symptoms of respiratory system corrosion may include coughing, burning, ulceration and pain. This product may have a direct toxic action resulting in a fall of blood pressure and cardiac arrhythmia. Death is usually due to cardiovascular collapse.

Burns to the respiratory tract can cause swelling that could require a tracheotomy. Pulmonary edema may be delayed for several hours or days. Toxic effects can also include depletion of calcium in the body, which can result in death if not treated.

Hydrofluoric Acid As-Low Content is corrosive to the digestive system. Symptoms of ingestion include coughing, burning, ulceration and pain. Death may occur unless treated promptly. Ingestion and/or vomiting may cause aspiration into the lungs resulting in chemical pneumonitis (inflammation of the lungs). Ingestion may also cause severe burns of the mucous membranes of the mouth, throat and gastrointestinal tract. Severe systemic effects can occur. Ingestion of even small amounts of dilute hydrofluoric acid has resulted in death.

Long-Term Health Effects

Prolonged or repeated exposure to Hydrofluoric Acid As-Low Content may cause blood disorders and/or damage to organs. Repeated exposures may cause bronchitis to develop with cough, phlegm and shortness of breath. Long-term or repeated exposure to Hydrofluoric Acid As-Low Content may cause fluorosis (a cosmetic condition which affects the teeth), osteosclerosis (thickening of the bones), calcification in ligament attachments, weight loss, stiffness of joints and discoloration of developing teeth.

Physical Hazards

Hydrofluoric Acid As-Low Content is stable under normal conditions of use. Heating to decomposition may release halogenated compounds. Avoid contact with metals, alkalis, water and moist air or steam, which can liberate flammable hydrogen gas and form explosive mixtures with air. Avoid heat, open flames and other potential sources of ignition.

Potential Environmental Impact

Hydrofluoric Acid As-Low Content degrades rapidly in the environment. An accidental release to water may pose a danger to fish (high toxicity), invertebrates (high toxicity) and aquatic plants (high toxicity) prior to degradation.

Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, Hydrofluoric Acid As-Low Content is not expected to pose a significant risk to human health or the environment.

References

European Union Risk Assessment Report - Hydrogen Fluoride, European Chemicals Bureau, Institute for Health and Consumer Protection

International Chemical Safety Card, International Programme on Chemical Safety (IPCS)

Safety Data Sheet (SDS), Hydrofluoric Acid As-Low Content, LANXESS Corporation

MedlinePlus Medical Encyclopedia, U.S. National Library of Medicine and the National Institutes of Health

NIOSH Pocket Guide to Hazardous Chemicals, National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention

ToxNet Hazardous Substance Data Bank, U.S. National Library of Medicine, National Institutes of Health and the U.S. Department of Health and Human Services

Contact Information

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Notices

Use and Application Information

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.