

# Maleic Anhydride

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This document provides a brief description of Maleic Anhydride, 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 safety data sheet.

## Identification

<b>Product Name:</b>	Maleic Anhydride
<b>Chemical Name:</b>	Maleic Anhydride
<b>Synonym(s):</b>	2,5-Furanedione Maleic Acid Anhydride
<b>CAS Number:</b>	108-31-6

## Description

<b>Overview:</b>	Maleic Anhydride is a white crystalline solid at ambient temperatures, but it is usually sold by LANXESS in molten form. This organic compound has a sharp, irritating odor.								
<b>Uses:</b>	LANXESS Maleic Anhydride is primarily used as an intermediate in the manufacture of unsaturated polyester and alkyd resins. The chemical is also used as an intermediate in the production of dyes, pharmaceuticals, agricultural chemicals and other products.								
<b>Properties:</b>	<table><tr><td><b>Melting Point:</b></td><td>127.04°F (52.8°C)</td></tr><tr><td><b>Boiling Point:</b></td><td>395.6°F (202°C)</td></tr><tr><td><b>Flash Point:</b></td><td>&gt;200°F (93°C)</td></tr><tr><td><b>Solubility in Water:</b></td><td>Soluble forming maleic acid</td></tr></table>	<b>Melting Point:</b>	127.04°F (52.8°C)	<b>Boiling Point:</b>	395.6°F (202°C)	<b>Flash Point:</b>	>200°F (93°C)	<b>Solubility in Water:</b>	Soluble forming maleic acid
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## **Potential Human Health Effects**

### **Occupational Exposure**

Potential for occupational exposure to Maleic Anhydride exists during manufacture, at transloading, storage and staging areas, and during mixing and sampling operations in the manufacture of other products. A lesser potential for exposure exists within facilities using Maleic Anhydride in closed manufacturing processes by trained personnel.

### **Employee Training**

Workers handling Maleic Anhydride are 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 organic vapor cartridges and particulate prefilter is recommended for transloading, unloading and other operations not contained within a closed system. In addition, LANXESS recommends that goggles, permeation resistant clothing, gloves and foot protection be worn when handling Maleic Anhydride.

### **Consumer Exposure**

LANXESS Maleic Anhydride has no known consumer uses. It is used by LANXESS customers to produce other chemicals. Consumer products manufactured with Maleic Anhydride as an intermediate are not expected to retain residuals of the chemical at dangerous levels.

### **Short-Term Health Effects**

Maleic Anhydride may be corrosive to the respiratory tract and may cause serious damage to the eyes. Inhalation of vapors may cause a severe allergic reaction in some asthmatics. Maleic Anhydride causes severe burns and may produce an allergic skin reaction in sensitive individuals. Ingestion of Maleic Anhydride is toxic and may cause digestive tract burns.

### **Long-Term Health Effects**

Prolonged vapor contact to Maleic Anhydride may cause conjunctivitis and photophobia (sensitivity of the eye to light). Prolonged or repeated exposure to the chemical has been linked to an increased incidence of bronchitis and dermatitis. Animal studies suggest possible reproductive effects. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

## **Physical Hazards**

Maleic Anhydride is incompatible with alkali metals and amines, and will react violently with bases. Contact with strong oxidizers may present a fire or explosion hazard. Care must be taken to avoid contact with moisture, heat, open flames and other potential sources of ignition.

## **Potential Environmental Impact**

Maleic Anhydride is readily biodegradable and is not expected to accumulate in the environment. Accidental releases through spills or untreated wastewater may pose a danger to fish (toxic), invertebrates (slight toxicity) and aquatic plants (slight toxicity) prior to biodegradation. Stack and fugitive air emissions are not likely to pose a significant risk to human health or the environment.

## **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, Maleic Anhydride is not expected to pose a significant risk to human health or the environment.

## **References**

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

*Maleic Anhydride, United States Department of Labor Internet Site*, Occupational Safety & Health Administration (OSHA)

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

*NIOSH Pocket Guide to Chemical Hazards*, National Institute for Occupational Safety and Health

*Technology Transfer Network Air Toxics Web Site*, Environmental Protection Agency (EPA)

## **Contact Information**

LANXESS Corporation, Product Safety & Regulatory Affairs, 111 RIDC Park West Drive, Pittsburgh, PA 15275-1112, USA, Phone 1-800-526-9377 [1-800-LANXESS]

## **Notices**

### **Use and Application Information**

The conditions of your use and application of our products, technical assistance and information (whether verbal, written or by way of production evaluation(s)), 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 at least must include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by LANXESS. All information is given without warranty or guarantee. It is expressly understood and agreed that customer assumes and hereby expressly releases LANXESS from all liability, in tort, contract or otherwise, incurred in connection with the use of our products and information. Any statement or recommendation not contained herein is unauthorized and shall not bind LANXESS Corporation. Nothing herein shall be construed as a recommendation to use any product in violation of any patent covering any material or its use. No permission or license to use any patent is implied or in fact granted by this publication.