

Adipic acid

This document provides a brief description of adipic acid, 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 material safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS Corporation safety data sheet.

Identification

Product Name:	Adipic acid
Chemical Name:	Adipic acid
Synonym(s):	1,4-Butanedicarboxylic acid 1,6-Hexanedioic acid ADP
CAS Number:	124-04-9

Description

Overview:	Adipic acid is a colorless, odorless solid at ambient temperatures. The chemical is sold in powder form.								
Uses:	Adipic acid is sold by LANXESS for use as an intermediate in the production of plastics, coatings, dyes, polyurethane foams and other products.								
Properties:	<table><tr><td>Melting Point:</td><td>151°C (303.8°F)</td></tr><tr><td>Boiling Point:</td><td>334°C (633.2°F)</td></tr><tr><td>Flash Point:</td><td>196°C (384.8°F) closed cup</td></tr><tr><td>Solubility in Water:</td><td>Soluble</td></tr></table>	Melting Point:	151°C (303.8°F)	Boiling Point:	334°C (633.2°F)	Flash Point:	196°C (384.8°F) closed cup	Solubility in Water:	Soluble
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Solubility in Water:	Soluble								

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture and in storage, staging and transfer operations at facilities using the chemical in the manufacture of other products. A much lower potential for exposure exists in facilities using adipic acid in closed manufacturing processes by trained personnel.

Employee Training

Workers handling adipic acid should be trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. Explosion-proof exhaust ventilation or other engineering controls should be used to keep adipic acid dust concentrations below any recommended or statutory limits. A NIOSH approved, air-purifying particulate respirator with N-95 filters should be worn where ventilation is inadequate. In addition, LANXESS recommends chemical resistant gloves and protective goggles with side shields be worn when handling adipic acid.

Consumer Exposure

LANXESS Corporation does not sell adipic acid to the general public. The chemical compound occurs naturally in some plants, including tobacco. The chemical is also present in a wide range of consumer products, including baking powders, laundry detergents and hair care products.

Short-Term Health Effects

Eye contact may cause severe irritation and abrasion, with symptoms of redness, watering and pain. Skin contact may cause mechanical (abrasive) irritation. Inhalation of adipic acid may result in respiratory tract irritation with symptoms of coughing and a sore throat. Ingestion may result in abdominal pain, nausea, vomiting and diarrhea.

Long-Term Health Effects

Repeated or prolonged inhalation of adipic acid dust may lead to chronic respiratory irritation.

Physical Hazards

Adipic acid is stable under normal conditions of use. Avoid contact with oxidizing materials. Concentrations of dust may form explosive mixtures with air. Heating to decomposition may release carbon monoxide and carbon dioxide. Avoid heat, open flames, electrostatic discharges and other potential sources of ignition.

Potential Environmental Impact

Adipic acid is readily biodegradable. An accidental release to environmental water sources may pose a danger to fish (low toxicity), invertebrates (low toxicity) and aquatic plants (low 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, adipic acid 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)

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

Safety Data Sheet (SDS), ADIPIC ACID, LANXESS Corporation

ToxNet Hazardous Substances 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.