

Aniline

Identification

Product name: Aniline

Aniline is also chemically known as aminobenzene, phenylamine, and benzeneamine.

CAS # 62-53-3

Chemical intermediate

Description

Aniline is used primarily in the production of methylene diphenyl diisocyanate (MDI). A great quantity of aniline is converted first into MDA (4,4'-methylenedianiline), which is then used to make MDI. A major application of MDI is in the production of rigid polyurethane foam used as insulation and for sound absorption. MDI is then used as an epoxy curing agent, as adhesives and corrosion inhibitors, and in the production of molded plastics.

Aniline is an important intermediate in the dye, agrochemical, pharmaceutical, and rubber and plastic additive industries. The derivative diphenylamine (DPA) is made from aniline, and our Product Stewardship Summary for DPA can be reviewed to get acquainted with its uses. Aniline is available in bulk and drum shipments.

Aniline is a starting material that leads to the production of polyurethane flexible foam, polyurethane rigid foam, antioxidants and many other compounds that are used in the manufacture of rubber, hydrolytic fluids, and fungicide stabilizers. Derivatives of aniline are used as intermediates in the preparation of spandex fibers, dyes and more. Polyurethane flexible foam is used in upholstery, furniture and mattresses, automotive seating and footwear. Solid polyurethane insulation is the primary thermal insulator used in practically all freezers and refrigerators in the world. It is also used as insulation in some buildings. The MDI derivative is used as an industrial strength adhesive, which is also found on hardware shelves for consumer use. Textiles and clothing can be dyed from aniline derivatives. The well-known drug acetaminophen is just one example of a drug prepared from aniline.

Product Safety Assessment: Aniline

Physical/Chemical Properties:

Aniline is a colorless, oily liquid. It has the pungent, unpleasant odor of rotten fish, characteristic of aromatic amines. This material is stable under normal storage and handling conditions. Hazardous polymerization will not occur. Aniline is soluble in water. Aniline is a flammable liquid. It is light sensitive and may become dark upon exposure to light and air.

Health Effects:

Aniline is toxic by all exposure routes. It is harmful or fatal if inhaled, swallowed or absorbed through the skin. Aniline causes eye and skin irritation and has the potential to cause sensitization by skin contact. Excessive overexposure may cause methemoglobinemia or/and spleen damage. Exposure to aniline may cause red blood cell damage.

Individuals with cardiovascular disease or impairment of respiratory function may be at additional risk. Persons with pre-existing blood disorders may be more susceptible to the effects of this material. Aniline can cause irritation and injury to the eyes. This product is or contains a component that has been reported to be possibly carcinogenic based on its classification by the International Agency for Research on Cancer, American Conference of Governmental Industrial Hygienists, National Toxicology Program, and the Environmental Protection Agency.

Potential Environmental Impact

Avoid spills to prevent entry into surface water, groundwater, sewer systems, and waterways. Aniline is toxic to aquatic life.

Product Stewardship:

It is important to refer to the Safety Data Sheet and information contained on the container label. All containers are to be kept tightly closed and stored in a dry, well-ventilated location. Proper personal protective equipment is to be worn when handling aniline. Appropriate chemical resistant gloves, full-face shield, and chemical resistant protective clothing are to be used when handling aniline. Engineering controls are the preferred method to ensure proper ventilation. Each specific operation needs to be evaluated for exposure to its vapors and mist. Respirator protection may be required, and in such cases the respirator manufacturer is to be consulted.

Product Safety Assessment: Aniline

Personnel are to avoid all contact with the material. Discharge into the environment must be avoided. Prevent from entering sewer systems, surface water or soil. All spills are to be contained and may be absorbed on inert material such as sand, earth or vermiculite. These absorbants are to then be collected and disposed of properly.

Keep away from sparks, flames, and all sources of ignition, as it is classified as a serious flammable hazard. Take measures to prevent buildup of electrostatic charge.

LANXESS SOLUTIONS US INC. conducts an ongoing analysis of its products to evaluate potential risk areas throughout the product's life cycle. Chemical risks are identified at the very early stage of new products. They are evaluated by stage-gated reviews using environmental, health, and safety (EHS) criteria. The analysis of existing products will evaluate raw materials, manufacturing, transportation, customer end-use and disposal. Additionally, before changes in existing product formulations are made, a detailed evaluation is made of the proposed change. A critical component of all of these processes is the Safety Data Sheet, which lists detailed product hazard information.

Potential product risks are reviewed according to current controls. In the context of a continually improving risk-reduction program, periodic reviews of current controls occur in order to identify opportunities for improvements or enhancements. This includes adaption of existing procedures to changes in regulations (e.g., covering workplace and transportation).

Exposure Potential:

Worker exposure routes can be through inhalation, ingestion and dermal contact with the material. It is toxic by inhalation, ingestion and skin absorption. It can be a skin irritant and a skin sensitizer. Environmental exposure can be through spillage, if it is not contained and thereby allowed to enter into waterways.

Contact Information

For more information, please contact us by our web site: <http://www.LANXESS.com>

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.