MOCA-MBOCA

4,4" Methylene bis (2-chloroaniline) (MOCA/MBOCA)is a diamine curative primarily for use with urethane pre-polymers. At room temperature, it takes the form of a solid, which may be pelletized or broken into flakes. MOCA/MBOCA typically melts at 98OC (208OF), into a clear, amber-colored liquid.

MOCA/MBOCA is for industrial use only by companies with the appropriate chemical handling capabilities.

Identification

- 4,4' Methylene bis (2-chloroaniline)
- CAS #s [101-14-4, 202-918-9]
- Vibracure® A133
- Vibracure A133 HS
- Vibracure A134

Description

MOCA/MBOCA is used by urethane pre-polymer processors as a curing/hardening agent. Processors react pre-polymers with MOCA to produce various industrial parts such as skateboard wheels, golf balls, industrial rollers and pipeline pigs.

Physical/Chemical Properties:

MOCA/MBOCA is an amber-colored solid pellet at room temperature and normal atmospheric pressure. It is recommended that MOCA/MBOCA be stored at room temperature in a dry environment. MOCA/MBOCA melts at temperatures greater than 98ºC (208ºF) to a clear amber-colored liquid. It is recommended that only the required amount of MOCA/MBOCA be melted and the full amount melted be used. MOCA/MBOCA melters may be used for safe handling of molten MOCA/MBOCA. The decomposition temperature of MOCA/MBOCA is 204ºC (400ºF). The safe maximum operating temperature is 140ºC (285ºF).

Health Effects:

The Occupational Safety & Health Administration (OSHA) has not established MOCA/MBOCA regulatory limits. The American Conference of Governmental Industrial Hygienists (ACGIH) guidelines for MOCA/MBOCA is 0.01 ppm, 8 hours weighted average (TWA). The main route of potential exposure is via inhalation, ingestion and eye or skin contact. MOCA/MBOCA is readily absorbed by the skin. Acute health effects include conjunctivitis (eye irritation), kidney/bladder irritation, cyanosis (bluing of skin) and thermal burns from molten material.

MOCA/MBOCA is a suspected carcinogen. The suspect target organs are the bladder, liver and lungs.

Potential Environmental Impact

The disposal of MOCA/MBOCA is regulated as a listed hazardous waste under the Resource Conservation and Recovery Act (RCRA), as of the Federal Register of May 19, 1980. MOCA/MBOCA can be disposed of by allowing it to react with isocyanate-terminated polymers containing excess isocyanate groups. When disposed, MOCA/MBOCA may be incinerated by an approved waste handler. Disposal must be in accordance with local, state and federal regulations.

Product Stewardship:

Warehousing Locations:

LANXESS SOLUTIONS US INC. purchases MOCA/MBOCA and resells it to processors of urethane-based parts and equipment as part of our product portfolio. Facility safety management procedures, Safety Data Sheet (SDS) and training programs are in place to communicate safe handling, risk mitigation measures and emergency response information and requirements to employees where MOCA/MBOCA is handled.

Processors/Users:

LANXESS SOLUTIONS US INC., as part of our continuing commitment to the American Chemistry Council Responsible Care® Program, provides MOCA/MBOCA customers with information to assist them with the development of minimum safe handling practices and procedures for this product. Risk mitigation measures for the processors during use of the product are mandated by the regulatory agency having jurisdiction (for example, the U.S. EPA) and are communicated to the user through the product label. Additional information is also found on the product SDS.

Environment:

Protective measures for the environment during use of the product are mandated by the regulatory agency having jurisdiction and are communicated to the user on the product label. Additional information is also found on the product SDS.

Exposure Potential:

Industrial Use:

MOCA/MBOCA is commonly used as a curative or a hardener for polyurethane pre-polymers. It is not sold to the general public. MOCA/MBOCA is sold for industrial applications to processors of urethane based parts and equipment. Customers and the public are advised, however, that the hazard information for a product is only one of several factors that can affect the potential risks presented by that product in any particular use and application. In using our products, customers should follow proper use instructions and ensure that proper personal protective equipment (PPE) is used. These are critical components in reducing the potential risks of any product. When handling MOCA/MBOCA all personal contact should be avoided. The level of PPE that is necessary to prevent contact will depend upon the nature of the operations. Employers are required by OSHA to conduct a PPE hazard assessment to determine the PPE that is necessary to protect their employees. Proper PPE requirements can be found on the MOCA SDS or on the OSHA PPE Standard (29 CFR 1910.132).

Environmental Release – Industrial Use:

MOCA/MBOCA products react with polyurethane pre-polymers with the application of heat. Once reacted, MOCA/MBOCA and a pre-polymer form a polyurethane elastomer, which has no reactive groups. However, MOCA/MBOCA could be released, if a spill is not properly treated.

Regulatory Compliance:

MOCA/MBOCA is listed on the numerous chemical inventories for countries or regions, such as the Toxic Substances Control Act Chemical Inventory in the U.S. and Domestic Substances List in Canada. MOCA/MBOCA is registered as an environmentally hazardous substance, solid, N.O.S. at various transportation agencies, such as DOT, TDG, and IMDG.

Conclusion

MOCA products are used as a curative/hardener for urethane pre-polymers. Protective measures for the users are mandated by the label and the SDS, and these requirements are emphasized in training programs. The

product is only sold to urethane processors. The general public cannot purchase or use MOCA products and is unlikely to encounter them in daily life.

References/Resources:

The SDS and additional information regarding MOCA can be found on the LANXESS web site: www.LANXESS.com. Additional information can be found at:

- OSHA Occupational Safety & Health Guideline for MOCA http://www.osha-slc.gov/SLTC/healthguidelines/4-4-methylenebis-2-hloroaniline/recognition.html
- U.S. Environmental Protection Agency: www.epa.gov/ttn/atw/hlthef/meth-dia.html
- U.S Department of Labor – Occupational Safety and Health Administration (OSHA) http://www.osha.gov/dts/chemicalsampling/data/CH_253500.html
- American Conference of Governmental Industrial Hygienists (ACGIH); http://www.acgih.org

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.