

Key Performance Advantages

- Controls problems associated with moisture in isocyanate-based (polyurethane and polyurea) coatings, sealants and elastomers
- Prevents downglossing, bubbles, pinholes and hazing
- Fast-acting, safe and effective

ZOLDINE[®] MS-PLUS

ZOLDINE[®] MS-PLUS Oxazolidine Moisture Scavenger
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine
CAS Reg. No. 143860-04-2

ZOLDINE MS-PLUS Moisture Scavenger is a fast reacting, low viscosity oxazolidine-based moisture scavenger for use in polyurethane and polyurea coatings, sealants and elastomers. ZOLDINE MS-PLUS Moisture Scavenger will safely and effectively eliminate moisture from the raw materials used in most polyurethane and polyurea systems. ZOLDINE MS-PLUS Moisture Scavenger will also alleviate the detrimental effects of humidity in the cast or spray application of two-component polyurethane and polyurea systems.

The use of ZOLDINE MS-PLUS Moisture Scavenger in a two-component polyurethane or polyurea system will provide the following benefits:

- Eliminates bubbles and pinholes
- Alleviates downglossing and hazing
- Improves distinctness of image (DOI)
- Improves abrasion and chemical resistance
- Improves adhesion
- Eliminates gassing
- Leaves no unreacted fillers in polyurethane or polyurea matrices
- Excellent handling properties



Paints and Coatings

Toxicology

ZOLDINE MS-PLUS Moisture Scavenger would be considered only slightly toxic by most toxicologists, but it is a severe irritant to eyes and skin. Specifically, the LD50 by oral ingestion in the rat was determined to be 2.36 g/kg. It is not a skin sensitizer and was not mutagenic in the Ames bacterial mutation test.

Individuals handling ZOLDINE MS-PLUS Moisture Scavenger should wear protective equipment sufficient to prevent contact with skin and eyes (i.e. rubber gloves, apron, eye protection).

Environmental Effects

Proper use of ZOLDINE MS-PLUS will not result in releases to the environment. Also, when released to water, it will rapidly hydrolyze as depicted on page two of this publication.

ANGUS has conducted some testing on ZOLDINE MS-PLUS and found the 48-hour EC50 for daphnia magna to be 52 mg/L (ppm).

In addition, ready biodegradability was investigated using OECD Guideline No. 301D. Based upon actual oxygen depletion versus the theoretical oxygen demand, ZOLDINE MS-PLUS was 43% biodegraded after 28 days. The compound was not inhibitory to activated sludge.

Regulatory

The components of ZOLDINE MS-PLUS appear on the U.S. EPA TSCA Chemical Substance Inventory.

It also has been notified in Canada as a "transitional" substance. In Australia, ZOLDINE MS-PLUS has been notified and assessed under the Industrial Chemicals Act (see the Australian Chemical Gazette No. C5,7 May 1996). Full notification also has been made in Europe and it has been placed on ELNCS.

Approval also has been obtained for import into Japan under MITI regulations.

Precautionary Labeling

Labels for ZOLDINE MS-PLUS Moisture Scavenger bear the following precautionary statements:

WARNING! CAUSES SEVERE EYE DAMAGE AND SKIN BURNS. COMBUSTIBLE LIQUID AND VAPOR.

Do not get in eyes, on skin or clothing. Wash thoroughly after handling. Keep away from heat and flame. Wear goggles or face shield and rubber gloves when handling.

FOR INDUSTRIAL USE ONLY

After this container has been emptied, it may contain ignitable vapors; observe all warnings and precautions listed for this product. Do not cut, puncture, or weld on or near this product.

First Aid

In case of eye contact – immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

If swallowed – do not induce vomiting; give victim several glasses of water and see a physician.

Shipping and Packaging

ZOLDINE MS-PLUS Moisture Scavenger is classified as a Class 8 (corrosive) material by the U.S. Department of Transportation (DOT). The bill of lading description used by ANGUS is:

CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S. (OXAZOLIDINE/N-ETHYLETHANOLAMINE)8, UN3267, III. IN CASE OF EMERGENCY USE DOT GUIDE 153 ATTACHED. TRADE NAME = ZOLDINE MS-PLUS

Shipping Containers	Net Wt
5-gallon steel drum	35 lb
55-gallon steel drum	400 lb

Storage Conditions

ZOLDINE MS-PLUS Moisture Scavenger is supplied under a nitrogen atmosphere. If the entire contents of the container are not used, the remaining product should be stored under nitrogen in order to eliminate any chance of contamination by moisture.

Product Stewardship

ANGUS encourages its customers to review their applications of ANGUS products from the standpoint of human health and environmental quality. To help ensure that ANGUS products are not used in ways for which they are not intended, ANGUS personnel will assist customers in dealing with environmental and product safety considerations. For assistance, Safety Data Sheets, or other information, please contact your ANGUS representative at the numbers provided in this document. When considering the use of any ANGUS product in a particular application, review the latest Safety Data Sheet to ensure that the intended use is within the scope of approved uses and can be accomplished safely. Before handling any of the products, obtain available product safety information including the Safety Data Sheet(s) and take the necessary steps to ensure safety of use.

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