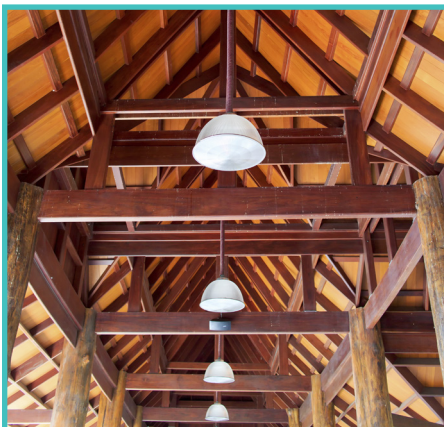


Key Performance Advantages

- Safety versus paraformaldehyde
- Convenience
- Fast adjustable reactivity
- Energy savings and/or increased productivity
- Excellent adhesive performance



Wood Adhesives

ZOLDINE[®] LH 2001

Rapid Cure Liquid Hardener for Resorcinol-Based Wood Bonding Adhesives

ZOLDINE[®] LH 2001 liquid hardener, used together with ZOLDINE LH-1000 liquid hardener, is a rapid cure system which minimizes the concerns and handling inconveniences associated with use of paraformaldehyde. This hardener combination helps avoid the fuming and exposure associated with paraformaldehyde, as well as expensive engineering controls that may be needed.

ZOLDINE LH 2001, like ZOLDINE LH 1000, is a low-viscosity liquid, having low vapor pressure and containing less than 0.1% free formaldehyde. It can be easily pumped, poured and mixed with other ingredients. Use of ZOLDINE LH 2001, in combination with ZOLDINE LH 1000, is intended for applications where fast initial bond development is desired. Because this system advances so quickly, it can only be used where short pot life and assembly times are accommodated. Fast-cure properties may facilitate reduction of oven temperature and/or time.

ZOLDINE LH 2001 helps laminates cured in conventional and radio frequency ovens pass stringent wet delamination tests such as ASTM D-2559, BS-EN-302-2 and JAS SE-9. Acceptable results may also be seen with certain resins under ambient temperature cure conditions (above 25°C).

Regional Product Availability

- North America
- Europe, Middle East and Africa
- Latin America
- Asia-Pacific

Typical Properties

These properties are typical but do not constitute specifications.

| Property | Typical Values |
|--------------------------------------|-------------------------|
| Active Ingredients, % | 98% |
| Viscosity @ 20°C | 5.2 centipoises (mPa s) |
| Freezing Temperature | < -20°C (-4°F) |
| Specific Gravity @ 25/25°C | 1.07 |
| Pounds per Gallon @ 25°C | 8.9 |
| pH @ 20°C (0.1M) | 10.0 |
| Flash Point (Tag Closed Cup) | 79°C (175°F) |
| Gardner Color | 1-2 |
| Volatiles, % | 100 |
| Equivalent Weight (as formaldehyde)* | 72g |
| Boiling Point @ 760 mmHg | 187°C |

*Equivalent weight = weight yielding the equivalent of one mole of formaldehyde.

Safe Handling, Storage and Disposal

Before using this product, consult the Safety Data Sheet (SDS) for details on material hazards, recommended handling precautions and product storage.

CAUTION! Keep combustible and/or flammable products and their vapors away from heat, sparks, flames and other sources of ignition including static discharge. Processing or operating at temperatures near or above product flashpoint may pose a fire hazard. Use appropriate grounding and bonding techniques to manage static discharge hazards.

CAUTION! In the event of partial or complete freezing of the product, gentle heating by placing drums or IBCs in a warm room (below 50°C) is recommended. Use of immersion heaters or other direct heating methods should be avoided as they may produce hot spots that could cause container softening and/or present risk of fire.

Store product in tightly closed original containers in a cool and dry place as recommended on the product Safety Data Sheet.

Dispose in accordance with all local, state (provincial) and federal regulations. Empty containers may contain hazardous residues. This material and its container must be disposed in a safe and legal manner.

It is the user's responsibility to verify that treatment and disposal procedures comply with local, state (provincial) and federal regulations. Contact your ANGUS Chemical Company technical representative for more information.

Customer Notice

ANGUS strongly encourages its customers to review both their manufacturing processes and their applications of ANGUS products from the standpoint of human health and environmental quality to ensure that ANGUS products are not used in ways for which they are not intended or tested. ANGUS personnel are available to answer your questions and to provide reasonable technical support. ANGUS product literature, including Safety Data Sheets, should be consulted prior to use of ANGUS products. Current Safety Data Sheets are available from ANGUS.

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, product 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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