



MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: S-1401 Hardener
PRODUCT USE: Part B of a 2-Part Epoxy Coating System
PRODUCT/MSDS DISTRIBUTION: United States and Canada
(Note: French Language Version Required for Distribution into Quebec)

MANUFACTURER: Covalence Specialty Materials
DIVISION: Corrosion Protection Group
ADDRESS: 8830 Siempre Viva Road, Suite 300
San Diego, CA 92154

FOR CHEMICAL EMERGENCY, SPILL, LEAK, FIRE, EXPOSURE or ACCIDENT
Call CHEMTREC – Day or Night – 1-800-424-9300 Toll Free in the continental U.S., Hawaii, Puerto Rico, Canada, Alaska or Virgin Islands. Outside the United States call: (703) 527-3887 (collect calls accepted)

OTHER TECHNICAL/HEALTH/SAFETY INFORMATION: (619) 424-4211

CHEMICAL FAMILY: This product is a resinous suspension that provides the hardening properties to a 2-part epoxy adhesive.
PRODUCT USE: Part B is a finished product that provides the hardening component in a resinous suspension with an as-designed, intended-use consisting of direct end-use application in a 2-part epoxy coating system in combination with the proper Part A component. When combined with the proper Part A component, the resulting epoxy coating has an end-use application in metal and plastic bonding where corrosion protection is desired (see, Covalence Adhesives Product Installation and Use Instructions that accompany the product).

This product is not considered an Article thus may be regulated under US-OSHA; CAN-WHMIS; IOSH; ISO; UK-CHIP; or EU Directives (67/548/EEC-Dangerous Substance Labeling, 98/24/EC-Chemical Agents at Work, 99/45/EC-Preparation Labeling, 2001/58/EC-MSDS Content), and an MSDS is required for this product considering that when used as recommended or intended, or under ordinary conditions, it may present a health and safety exposure or other hazard.

Additional Information

No additional information. When combined with the proper Part A component, this product is intended for harsh environments, such as wet bonding applications. Please request information if considering non-STP, incompatible-conditions or use beyond current product labeling or instructions. Note that Part A should not be stored/dispensed in high temperature or humid/wet conditions without precaution.

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS #	% by Wt
2,4,6- tris(dimethylaminomethyl)phenol	90-72-2	10-15
Phenol	108-95-2	<5
2-piperazin-1-ylethylamine	140-31-8	<5
Formaldehyde, oligomeric reaction products with phenol and triethylenetetramine	32610-77-8	10-15

Additional Information

No additional information. These ingredients reflect components of the finished Part B product related to performance of the product as distributed into commerce.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Avoid all personal contact. May cause severe skin and eye irritation and burns. Toxic when absorbed through skin or swallowed. In case of skin contact flush well with and seek medical attention. If ingested, DO NOT induce vomiting. Give one glass of water to drink and seek immediate medical attention.

POTENTIAL HEALTH EFFECTS

EYES: This material is corrosive and can cause severe burns to the eyes. Direct contact or exposure to vapors or mists may cause stinging, tearing, redness, corneal damage and irreversible eye damage. Persons with pre-existing eye disorders may be more susceptible to the effects of this material.

SKIN: This material is corrosive and can cause severe burns to the skin. Direct contact can be severely irritating to the skin and may result in redness, swelling, burns and severe skin damage. Skin contact may be harmful. Toxic when absorbed through the skin. Repeated contact may cause an allergic skin reaction in sensitized individuals. Persons with pre-existing skin disorders may be more susceptible to the effects of this material.

INGESTION: May be harmful or fatal if swallowed. Ingestion may cause severe irritation and burns of the mouth, throat and digestive tract.

INHALATION: Breathing vapors or mists may cause severe irritation and burns of the nose, throat and respiratory tract. Symptoms of overexposure may include coughing, tightness of the chest or shortness of breath. Repeated exposure may cause an allergic respiratory reaction in sensitized individuals. Pre-existing lung disorders (for example asthma-like conditions) may be aggravated by exposure to vapors or mists.

ACUTE HEALTH HAZARDS:

Corrosive may cause burns to eyes, skin, and respiratory tract.

CHRONIC HEALTH HAZARDS:

Prolonged or repeated overexposure to this material may cause central nervous system damage. Results of tests in cell culture systems have shown that a minor component of this material can cause changes in the genetic material (DNA) of a cell. The human health effects of these changes are not fully understood.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Pre-existing eye, skin, and respiratory disorders may be aggravated by exposure.

Additional Information

Under certain conditions of use, such as sanding the cured product, dusts may be formed. Contact with dusts may be abrasive and irritating to the eyes, skin and respiratory tract. Prolonged or repeated overexposure to dusts may result in chronic bronchitis (lung inflammation) with symptoms of coughing and shortness of breath. Persons with pre-existing eye and skin disorders may be more susceptible to the effects of dust exposure. Respiratory symptoms associated with pre-existing lung disorders (e.g., asthma conditions) may be aggravated by exposure to dust.

SECTION 4: FIRST AID MEASURES

EYES: Holding eyelids apart, flush affected eye(s) with clean water for at least 20 minutes. Seek immediate medical attention.

SKIN: Immediately wipe material from skin and wash affected area(s) with plenty of mild soap and water while removing contaminated clothing and shoes. If symptoms persist, seek medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

INGESTION: Seek immediate medical attention.

INHALATION: If respiratory or other symptoms of exposure develop, move victim to fresh air and seek medical attention. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention. If victim is not breathing, move to fresh air and immediately begin artificial respiration. Keep victim warm and quiet; seek immediate medical attention.

Additional Information

No additional information

SECTION 5: FIRE-FIGHTING MEASURES

Flash Point > 93.3° C (>200 ° F) TCC

Autoignition temperature No data available

Lower Explosive Limit (LEL) Not established

Upper Explosive Limit (UEL) Not established

Extinguishing Media

Carbon dioxide, foam, dry chemical, water.

Special Fire Fighting Procedures

Fireman should wear self-contained breathing apparatus. Use water spray to cool nearby containers and structures exposed to fire. The water used for firefighting may be environmentally unsafe. Contain water used and test to determine proper method of disposal.

Unusual Fire and Explosion Hazards

None known

HMIS HAZARD CLASSIFICATION

HEALTH: 3 FLAMMABILITY: 1 REACTIVITY: 0

Additional Information

No additional information.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:

Wear appropriate personal protective equipment. Prevent soil and water pollution. Contain spill with inert absorbent. Take measures to stop spillage at source, contain leaking substance, transfer material into suitable containers and dispose in accordance with local regulations.

Additional Information

No additional information

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE:

Mixing and application should be done in a well-ventilated area. Local exhaust is recommended; general dilution ventilation is acceptable. Avoid all personal contact. Do not breathe vapor or mist. Keep containers tightly closed. Wash thoroughly after using. Parts A and B release heat when combined. Store in a cool, dry, well-ventilated area. Use lined drums that meet UN1A/X1.8/300/97 regulations.

OTHER PRECAUTIONS:

Store away from direct sunlight under normal storage conditions of approximately 23C and 50% Relative Humidity to maximize the shelf life of this product and to avoid product degradation prior to use as-intended. Storage at temperatures beyond normal-use conditions may adversely affect product functionality, and elevated temperatures may create hazardous conditions.

Additional Information

Containers, even those that have been emptied, can contain hazardous residues. Protect containers from physical damage to avoid leaks and spills.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION
ENGINEERING CONTROLS:

Use with adequate ventilation.

VENTILATION:

Local exhaust is recommended; general dilution ventilation is acceptable.

RESPIRATORY PROTECTION:

If ventilation is inadequate, use NIOSH approved respirator for organic vapor. Use NIOSH approved supplied air or self-contained breathing apparatus where there may be potential for hazardous airborne exposure. For large-scale spray applications, wear a completely enclosed chemical suit with positive pressure supplied air or self-contained breathing apparatus. Under certain conditions of use, such as sanding of the cured product, nuisance dusts may be formed. If dusts are generated use proper ventilation to maintain airborne dust concentration below exposure limits.

EYE PROTECTION:

Wear chemical goggles

SKIN PROTECTION:

Wear chemical resistant gloves as a standard procedure to prevent skin contact.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear gauntlets and apron, especially for transfer of bulk quantities of concentrated product. Wear a completely enclosed chemical suit during large-scale spray applications.

EXPOSURE GUIDELINES:**2,4,6- tris(dimethylaminomethyl)phenol**

Ontario:	Time-weighted Average Exposure Value:	Not Established
OSHA	Permissible Exposure Limit (TWA)	Not Established
ACGIH	Threshold Limit Value (TWA)	Not Established

Phenol

Ontario:	Time-weighted Average Exposure Value:	Not Established
OSHA	Permissible Exposure Limit (TWA)	5 ppm (skin)
ACGIH	Threshold Limit Value (TWA)	5 ppm (skin)

2-piperazin-1-ylethylamine

Ontario:	Time-weighted Average Exposure Value:	Not Established
OSHA	Permissible Exposure Limit (TWA)	Not Established
ACGIH	Threshold Limit Value (TWA)	Not Established

Formaldehyde, oligomeric reaction products with phenol and triethylenetetramine

Ontario:	Time-weighted Average Exposure Value:	Not Established
OSHA	Permissible Exposure Limit (TWA)	Not Established
ACGIH	Threshold Limit Value (TWA)	Not Established

Additional Information

No additional information

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Amber
ODOR:	Amine odor
PHYSICAL STATE:	Resinous Suspension
pH:	Alkaline
BOILING POINT:	Not determined
FREEZING POINT:	Not determined
VAPOR PRESSURE:	Not determined
VAPOR DENSITY (AIR = 1):	Not determined
SPECIFIC GRAVITY (H₂O = 1):	1.064
EVAPORATION RATE:	Not determined
SOLUBILITY IN WATER:	Negligible
% VOLATILE BY VOLUME	0.02
WATER/OIL PARTITION COEFFICIENT	Oil soluble
VISCOSITY (poise @ 25° C	Not available

Additional Information

No additional information

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	This product is stable under normal conditions at ambient temperature.
INCOMPATIBILITY (MATERIAL TO AVOID):	Avoid heat, flame and other ignition sources. Avoid contact with strong oxidizers, such as organic peroxides. Reaction with some curing agents may produce considerable heat, especially when large masses of material are involved.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:	Hazardous thermal degradation and combustion products include, but are not limited to, carbon monoxide, carbon dioxide, aldehydes and oxides of nitrogen.
HAZARDOUS POLYMERIZATION:	Not likely to occur.

Additional Information

Thermal degradation is not significant at temperatures achieved during proper application, as directed by product instructions.

SECTION 11: TOXICOLOGICAL INFORMATION

Results of tests in cell culture systems have shown that a minor component of this material can cause changes in the genetic material (DNA) of a cell. The human health effects of these changes are not fully understood.

The ingredients in this product, present at equal to or greater than 0.1% of the product, are not listed by OSHA, NTP, or IARC as suspect carcinogens.

Additional Information

The information provided corresponds to the individual components of this material in its uncured state. Toxicity studies have not been performed on the product as a whole.

SECTION 12: ECOLOGICAL INFORMATION

No ecological information available

Additional Information

No additional information. This product is not expected to present an ecological hazard when used under reasonable conditions and as-intended/as-designed by the manufacturer.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Follow local, State/Provincial, and Federal/National regulations applicable to as-used, end-of-life characteristics to be determined by end-user.

US-EPA HAZARD CLASS: Not Applicable to finished Part B product as manufactured for distribution into commerce.

Additional Information

No additional information. This product is not expected to present a hazard when disposed under reasonable conditions of end-use and in accordance with applicable law.

SECTION 14: TRANSPORT INFORMATION

GROUND – US-DOT/CAN-TDG/EU-ADR/APEC-ADR

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (Cycloaliphatic Polyamines)		
Hazard Class	Class 8	ID Number	UN2735
Packing Group	III	Labels	Corrosive

AIRCRAFT – ICAO-IATA

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (Cycloaliphatic Polyamines)		
Hazard Class	Class 8	ID Number	UN2735
Packing Group	III	Labels	Corrosive

VESSEL – IMO-IMDG

Proper Shipping Name	Amines, liquid, corrosive, n.o.s. (Cycloaliphatic Polyamines)		
Hazard Class	Class 8	ID Number	UN2735
Packing Group	III	Label	Corrosive

Additional Information

No additional information. Note that transport requires proper packaging and paperwork, including the Nature and Quantity of goods, per applicable origin/destination/customs points as-shipped. As-intended for use as a 2-part adhesive, transport of Parts A and B in the same package, carton or pallet may change the transport requirements indicated above for Part B alone.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA Section 8b – Inventory Status: All chemicals comprising this product are either exempt or listed on the TSCA Inventory.

TSCA Section 12b – Export Notification: This product contains the following chemicals subject to TSCA Section 12b export notification.

<u>Chemical</u>	<u>CAS #</u>
Phenol	108-95-2

TSCA Section 4 data are required for Phenol (108-95-2) under a signed Enforceable Consent Agreement (ECA). Therefore, the TSCA Section 12(b) export requirements associated with Phenol currently apply only to those companies that signed the ECA. All other exporters of this Phenol are not yet, but may become, subject to TSCA Section 12(b) export notification requirements for this chemical.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT)

Chemicals present in the product at a level which could require reporting under the statute:

<u>Chemical</u>	<u>CAS #</u>
Phenol	108-95-2

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

This product contains the following chemicals subject to the reporting requirements of Section 313 of SARA Title III.

<u>Chemical</u>	<u>CAS #</u>	<u>% Wt</u>
Phenol	108-95-2	<5

CERCLA SECTION 311/312 HAZARD CATEGORIES:

Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No
Immediate Hazard	Yes
Delayed Hazard	Yes

STATE REGULATIONS

California Proposition 65

This product contains the following chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm:

<u>Chemical</u>	<u>CAS No.</u>	<u>% Wt</u>
None		

INTERNATIONAL REGULATIONS

Canadian Domestic Substance List (DSL)

All ingredients in this product or used to manufacture this product are included on the Domestic Substances List.

WHMIS Classifications

Class D, Division 2 – Poisonous and infectious material: other toxic effects; Class E – Corrosive Material.

NPRI and Ontario Regulation 127/01

This product contains the following chemicals subject to the reporting requirements of Canada NPRI +/-or Ont. Reg. 127/01:

<u>Chemical</u>	<u>CAS No.</u>	<u>% Wt</u>
Phenol	108-95-2	<5

European Inventory of Existing Commercial Chemical Substances (EINECS)

All ingredients in this product or used to manufacture this product are exempt from, or included on, the European Inventory of Existing Commercial Chemical Substances. EEC R-Phrases are not included in this MSDS.

Additional Information

No additional information. This product may be regulated under additional regulations and laws not identified above, such as for uses other than described or as-designed/as-intended by the manufacturer, or for distribution outside of the USA/Canada.

SECTION 16: OTHER INFORMATION

OTHER INFORMATION

Not Applicable for distribution into commerce within the USA or Canada.

Sources of Information

International Agency for Research on Cancer (1987), *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans: Overall Evaluations of Carcinogenicity: An updating of IARC Monographs Volumes 1-42, Supplement 7, Lyon, France.*

Ontario Ministry of Labour Regulation 654/86. Regulations Respecting Exposure to Chemical or Biological Agents.

RTECS – Registry of Toxic Effects of Chemical Substances, National institute for Occupational Safety and Health.

PREPARATION INFORMATION


DATE OF ISSUE: 02 June 2006 SUPERCEDES: 14 October 2004.

DISCLAIMER

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*The information presented herein was prepared at **Covalence** / Adhesives (San Diego, California) by qualified technical personnel, and to our knowledge it is true and accurate. The information and recommendations are furnished for this product with the understanding that the purchaser will independently determine the suitability of the product for this purpose. The data do not constitute a warranty, expressed or implied, statutory or otherwise, nor are they a representation for which **Covalence** / Adhesives assumes legal responsibility. The data are submitted for the user's information and consideration only. Any use of this product must be determined by the user to be in accordance with the applicable federal, state, and local laws and regulations.*

END

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