



MATERIAL SAFETY DATA SHEET

PREPARED IN ACCORDANCE WITH EC DIRECTIVE 91/155/EEC AND SUBSEQUENT DIRECTIVES

CS600B HARDENER

Revision Date: 7/31/12

1. CHEMICAL IDENTIFICATION:

PRODUCT NAME:	CS600B Hardener
SYNONYMS, TRADE NAMES:	Curing Agent, Part B
APPLICATIONS:	Industrial Laminating
EMERGENCY TELPEHONES:	CHEMTREC USA 1-800-424-9300 INTERNATIONAL +1 703 527 3887 CONTRACT #5043
SUPPLIER CLOCK SPRING COMPANY L.P. 621 LOCKHAVEN DRIVE HOUSTON, TX 77073 PHONE: 281-590-8491 EMAIL: MSDS@CLOCKSPRING.COM	MANUFACTURER Endurance Technologies, Inc. 275 Bridge Point Drive South Saint Paul, MN 55075, USA TELEPHONE: +1 651 451 8000 FACSIMILE: +1 651 451 9728
CONTACT PERSON:	Eric Frank

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME:	CAS NUMBER:	CONTENT:	HEALTH:	RISK PHRASES:
Isophoronediamine	2855-13-2	40-70%	C	R21/22, R34, R43, R52/53
2,4,6-tris(dimethylaminomethyl) phenol	90-72-2	5-15%	Xi, Xn	R22, R36/38
Triethylenetetramine	112-24-3	5-10%	Xi	R36/38, R43
Phenol	108-95-2	3-10%	C, Xn	R20/21/22, R34, R68

3. HAZARDS IDENTIFICATION:

Harmful by inhalation, in contact with skin and if swallowed. Causes burns. Irritating to eyes and skin. May cause sensitization by skin contact. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Possible risk of irreversible effects.

4. FIRST AID MEASURES:

INHALATION:	Remove to fresh air. If breathing is labored, administer oxygen. Give artificial respiration if not breathing. Get medical attention.
INGESTION:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Promptly get affected persons to drink water. Obtain emergency medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
SKIN:	Remove and do not reuse contaminated clothing. Wash exposed areas thoroughly with soap and water, and flush for ten minutes. It is not recommended to remove resin from skin with solvents. Solvents only increase contact and dry skin.
EYES:	Flush with water immediately. Continue to flush for 15 minutes and obtain emergency medical attention.

5. FIRE FIGHTING MEASURES:

EXTINGUISHING MEDIA:	Foam, dry chemical or carbon dioxide.
SPECIAL FIRE FIGHTING	Clear fire area of all non-emergency personnel.

PROCEDURES:	Do not enter confined fire spaces without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure NIOSH approved self-contained breathing apparatus. Use water spray to cool containers and disperse vapors. Keep spills away from sources of ignition.
UNUSUAL FIRE & EXPLOSION HAZARDS:	May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustions may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.


6. ACCIDENTAL RELEASE MEASURES:

SPILL CLEAN-UP METHODS:	Remove all possible sources of ignition or polymerization (see Sections 5, 9 and 10). Equip personnel with proper protection (see Section 8). Dike in spill to prevent from spreading. Collect for disposal. Use absorbent to soak up remainder of liquid. May be covered with foam or dry chemical if danger of ignition exists. Notify authorities as required by law.
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7. HANDLING AND STORAGE:

USAGE PRECAUTIONS:	Corrosive; causes burns. Avoid skin and eye contact. Use and store only with adequate ventilation or use respiratory protection. If vapors are present, use a NIOSH/MSHA approved positive pressure, supplied air respirator. If potential for splashing is present, splash goggles or a full face shield should be worn. Do not allow any skin contact. If potential for skin contact is present, impervious clothing should be worn. Neoprene coated fabric is recommended for this application.
STORAGE PRECAUTIONS:	Store in a cool, dry place with adequate ventilation. Keep containers closed when not in use. Keep away from open flames and high temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

PROTECTIVE EQUIPMENT:	
VENTILATION:	Provide adequate general and local exhaust ventilation. At least 10 changes per hour are recommended.
PROTECTIVE GLOVES:	Wear suitable protective Butyl, EVAL-Laminate, PVC or Nitrile gloves.
EYE PROTECTION:	Wear approved chemical safety goggles where eye exposure is



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	possible. Contact lenses should not be worn when working with this material.
OTHER PROTECTIVE EQUIPMENT AND HYGIENIC WORK PRACTICES:	Wear protective clothing specified for normal operations to prevent skin contact. Use engineering controls to reduce air contamination to permissible exposure limits. Wear a respirator fitted with a chemical cartridge if there is a risk of breathing vapors. Provide eyewash, quick drench, and safety showers.

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE:	Translucent Liquid	VAPOR PRESSURE:	<0.5 mm Hg @ 20°C
COLOR:	Amber	VOLATILITY DESCRIPTION:	Not Volatile
ODOR:	Fishy	EVAPORATION RATE:	NA
SOLUBILITY IN WATER:	Miscible	FLASH POINT:	>100°C Open Cup
BOILING POINT:	NA	FLAMMABILITY LIMIT – LOWER (%):	NA
SPECIFIC GRAVITY:	0.97	FLAMMABILITY LIMIT – UPPER (%):	NA
VAPOR DENSITY (AIR=1):	>1		

10. STABILITY AND REACTIVITY:

STABILITY:	Stable under normal use conditions. Decomposition above 260°C may release ammonia.
HAZARDOUS POLYMERIZATION:	Will not occur.
MATERIALS TO AVOID:	Strong oxidizing agents, sodium hypochlorite, organic and mineral acids, peroxides, nitrites, nitrosating agents, reactive metals and materials reactive with hydroxyl compounds. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
HAZARDOUS DECOMPOSITION PRODUCTS:	Ammonia, nitric acid, nitrogen oxides, carbon monoxide, carbon dioxide, aldehydes, flammable hydrocarbon fragments, nitrosamine.

11. TOXICOLOGICAL INFORMATION:

INGREDIENT NAME:	CAS NUMBER:	LD ₅₀ ORAL (RAT)	LD ₅₀ DERMAL (RABBIT)
Isophoronediamine	2855-13-2	1,030 mg/kg	Not Established
2,4,6-tris(dimethylaminomethyl) phenol	90-72-2	1,673 mg/kg	1,242 mg/kg
Triethylenetetramine	112-24-3	2,500 mg/kg	805 mg/kg
Phenol	108-95-2	317 mg/kg	630 mg/kg

INHALATION:	May cause respiratory tract irritation. May
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	cause an allergic reaction.
INGESTION:	Will cause illness.
SKIN:	Causes burns and skin irritation. May cause skin sensitization (dermatitis).
EYES:	Causes burns and severe eye irritation.
HEALTH WARNING:	Prolonged inhalation of high concentrations of vapors may be harmful. Repeated or prolonged contact causes sensitization, asthma and eczemas.
ROUTE OF ENTRY:	Inhalation, skin and eyes.
TARGET ORGANS:	Skin, eyes, kidney, liver, pancreas, spleen, respiratory tract and lungs.
MEDICAL CONSIDERATIONS:	Skin disorders and allergies may increase sensitivity to contact.


12. ECOLOGICAL INFORMATION:

ECOLOGICAL INFORMATION:	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
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13. DISPOSAL CONSIDERATIONS:



DISPOSAL METHODS:	Soak up with an absorbent such as clay, sand or other suitable material. Place in nonleaking container. Seal tightly for proper disposal. Dispose of by incineration or landfill via licensed waste disposal contractor in accordance with local and national regulations. Contaminated packaging should be emptied as much as possible. Labels must not be removed from containers unless they have been cleaned.
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14. TRANSPORTATION INFORMATION:

LABEL FOR CONVEYANCE:	
PROPER SHIPPING NAME:	Isophoronediamine Solution
ROAD TRANSPORT:	
UN NUMBER ROAD:	2289
ADR CLASS:	8
ADR PACKING GROUP:	III
SEA TRANSPORT:	
UN NUMBER SEA:	2289
IMDG CLASS:	8
IMDG PACKING GROUP:	III
MARINE POLLUTANT:	Yes
RAIL TRANSPORT:	
UN NUMBER RAIL:	2289
RID CLASS:	8
AIR TRANSPORT:	
UN NUMBER AIR:	2289
ICAO CLASS:	8

ICAO PACKING GROUP:	III
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15. REGULATORY INFORMATION:

LABELS FOR SUPPLY:	 
CONTAINS:	Isophoronediamine, 2,4,6-tris(dimethylaminomethyl)phenol, Triethylenetetramine and Phenol
RISK PHRASES:	R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R34 Causes burns. R36/38 Irritating to eyes and skin. R43 May cause sensitization by skin contact. R52/53 Harmful to aquatic organisms, may cause long term adverse affects in the aquatic environment. R63 Possible risk of harm to the unborn child.
SAFETY PHRASES:	S1/2 Keep locked up and out of the reach of children. S24/25 Avoid contact with skin and eyes. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28 After contact with skin, wash immediately with plenty of soap and water. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S45 In case of accident or if you feel unwell, seek medical advice Immediately (show the label where possible). S51 Use only in well ventilated areas. S61 Avoid release to the environment. Refer to special instructions/ safety data sheets
UK REGULATORY REFERENCES:	Classification, Packaging and Labeling Regulations 1999. Health and Safety at Work Act 1974. The Control of Substances Hazardous to Health (COSHH) Regulations 1992.

16. OTHER INFORMATION:

REVISION COMMENTS: Original

SUPERSEDES: JUNE 2007

DISCLAIMER: The information provided in this material safety data sheet is correct to the best of our knowledge, information and belief at the date of its publication. No warranty expressed or implied is made. Health and safety precautions detailed in this material safety data sheet may not be adequate for all individuals and/or situations. Since the use of this information and the conditions of use for the product are not within our control, it is the user's obligation to determine the condition of safe use for the product. It is the user's obligation to evaluate and use this data in order to comply with all applicable laws and regulations. The user assumes full responsibility for determining appropriate use and application of the product.



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Prepared By:

Clock Spring Company L.P.

From Information Supplied By: Endurance Technologies, Inc.
275 Bridge Point Drive
South Saint Paul, MN 55075
Phone: 651-451-8000

Prepared on 7/31/12

Supercedes June 13, 2007

The Information in the Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's responsibility to determine the suitability of this information for the adoption of the safety precautions as may be necessary. We reserve the right to revise Material Safety Data Sheets from time to time as new technical information becomes available. The user has the responsibility to contact the company to make sure that the sheet is the latest on issued.