MATERIAL SAFETY DATA SHEET

AGFA CORPORATION
100 Challenger Road
Ridgefield Park, NJ 07660

TRANSPORTATION EMERGENCY
CALL CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

NON-TRANSPORTATION
HEALTH EMERGENCY PHONE..: (303) 623-5716
AGFA INFORMATION PHONE..: (201) 440-2500

1. CHEMICAL PRODUCT IDENTIFICATION:

PRODUCT NAME.....: HD Fixer Part B
PRODUCT CODE.....: LH1F5000 LH1G7000 LH1HA000
CHEMICAL FAMILY.....: Aqueous Acid Solution containing Sulfuric Acid, Acetic Acid, and Aluminum Sulfate
AGFA MSDS NUMBER....: 671tb.001

2. COMPOSITION/INFORMATION ON INGREDIENTS:

INGREDIENT NAME /CAS NUMBER	EXPOSURE LIMITS	CONCENTRATION (%)
***** HAZARDOUS INGREDIENTS *****		
Aluminum Sulfate 10043-01-3	OSHA PEL : Not Established ACGIH TLV: 2.00 mg/m3 TWA*	5-10 %
*Aluminum, Soluble Salts (as Al)		
Acetic Acid 64-19-7	OSHA PEL :10.00 ppm TWA 25.00 mg/m3 ACGIH TLV:10.00 ppm TWA 25.00 mg/m3	1-5 %
Sulfuric Acid 7664-93-9	OSHA PEL : 1.00 mg/m3 TWA ACGIH TLV: 1.00 mg/m3 TWA 3.00 mg/m3 STEL	1-5 %

3. HAZARDS IDENTIFICATION:

This product as a whole has not been tested. This hazard information is for the individual ingredients.

EMERGENCY OVERVIEW

DANGER! Corrosive; Color: Colorless; Form: Liquid; Clear; Odor: Strong vinegar; Causes respiratory tract burns; Causes skin burns; Causes eye burns; Causes digestive tract burns; Irritating gases/fumes may be given off during burning or thermal decomposition.

POTENTIAL HEALTH EFFECTS:

ROUTE(S) OF ENTRY.....: Eye and skin contact, inhalation of vapors or mists, accidental ingestion.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE:
ACUTE INHALATION.....: Overexposure to acetic acid vapors and aluminum sulfate can cause irritation to the respiratory tract resulting in coughing, runny nose and sore throat. Sulfuric acid is corrosive and the vapors are irritating to the mucous membranes of the respiratory tract. Inhalation of sulfuric acid vapors can result in coughing, choking and inflammation of the respiratory tract.
ACUTE SKIN CONTACT.....: Direct contact with acetic acid and aluminum sulfate can cause skin irritation, possibly severe, with symptoms of burning, reddening, itching, and swelling. Skin sensitization with acetic acid is rare, but has been reported. Direct contact with sulfuric acid causes severe burns with symptoms of burning, reddening, itching, and blistering of the skin.
CHRONIC SKIN CONTACT.....: Repeated contact with low concentrations of sulfuric acid may cause skin desiccation (drying) and ulcerations.
ACUTE EYE CONTACT.....: Overexposure to acetic acid can cause severe irritation resulting in burning, stinging, reddening, tearing, swelling and possible injury to the cornea depending on the concentration of the acid. Aluminum sulfate may cause irritation and possible corneal burns due to the reaction of the compound with moisture to form sulfuric acid. Sulfuric acid is corrosive and its vapors are irritating to the mucous membranes of the eyes. Severe eye irritation will result from exposure to sulfuric acid vapor or solution. Initial symptoms may be discomfort, tearing and/or blurring ot vision. Permanent eye damage including blindness may result if there is a delay in flushing it from the person's eyes.
CHRONIC EYE CONTACT.....: Repeated or prolonged exposure to sulfuric acid may result in lacrimation and chronic conjunctivitis.
ACUTE INGESTION.....: Swallowing concentrated acetic acid may cause severe injury. Ingestion of aluminum sulfate may cause irritation or burn the digestive tract. If ingested, sulfuric acid is corrosive to the tissues with which it come in contact. Ingestion of sulfuric acid may cause burning pain in the mouth, throat, esophagus and abdomen.

CARCINOGENICITY.....: The components of this product are not listed by NTP, IARC or regulated as a carcinogen by OSHA.

MEDICAL CONDITIONS
AGGRAVATED BY EXPOSURE.....: Persons with preexisting eye, skin, or respiratory tract disorders may be more susceptible to the effects of this product.

4. FIRST AID MEASURES:

FIRST AID FOR EYES.....: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.
FIRST AID FOR SKIN.....: Flush affected areas promptly with water and soap for 15 minutes. Remove contaminated clothing. In case of continued irritation consult physician.
FIRST AID FOR INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
FIRST AID FOR INGESTION.: Drink 1-2 glasses of water. Never give anything by mouth to an unconscious person. Seek medical attention. Take this MSDS to physician.

5. FIRE FIGHTING MEASURES:

FLASH POINT.....: Noncombustible
EXTINGUISHING MEDIA.....: Material is not combustible. Use extinguishing media suitable for other combustible materials in the area.
SPECIAL FIRE FIGHTING PROCEDURES: Evacuate personnel to a safe area. Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus.
UNUSUAL FIRE / EXPLOSION HAZARDS: When heated to decomposition emission of toxic fumes of SO2 is possible.

6. ACCIDENTAL RELEASE MEASURES:

SPILL OR LEAK PROCEDURES.....: Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up. Dike Spill. Prevent liquid from entering sewers, waterways or low areas. Soak up with sawdust, sand, oil dry or other absorbent material. Spill may be neutralized with powdered Sodium Carbonate. For disposal see section 13.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE(MIN/MAX): Store between 40 F (4.4 C) and 80 F (26 C). Preferred storage is at 68 F (20 C).
SHELF LIFE.....: N.A.
SPECIAL SENSITIVITY.....: Keep from freezing.
HANDLING/STORAGE PRECAUTIONS: Avoid eye and skin contact, and store in well-ventilated area. Keep container tightly closed. Do not store with incompatible materials. Do not store or consume food, drink or tobacco in area where they may become contaminated with this material. For incompatibles see section 10.
OTHER NOTES.....: Keep out of the reach of children.

8. PERSONAL PROTECTION:

PROTECTIVE CLOTHING REQUIREMENTS...: Splash protection required for eyes, e.g., eye glasses with side shields or goggles. For skin protection use chemical resistant gloves and aprons, e.g. made of neoprene, rubber, vinyl.
VENTILATION REQUIREMENTS.....: Use sufficient general room ventilation and/or local exhaust to maintain airborne levels of vapors below applicable exposure limits (see Section 2).
RESPIRATOR REQUIREMENTS.....: Under normal conditions of use, respirator protection is not required. If respirators are used, institute a program in accordance with OSHA standard 29CFR1010.134.
ADDITIONAL PROTECTIVE MEASURES.....: Emergency showers and eye wash stations should be made available. Educate and train employees in the safe use and handling of this product.

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM.....: Liquid
APPEARANCE.....: Clear
COLOR.....: Colorless
ODOR.....: Strong vinegar
pH .....: Less than 0.5
BOILING POINT.....: Approx. 221 F
MELTING/FREEZING POINT....: Not Established
SOLUBILITY IN WATER .....: Soluble
SPECIFIC GRAVITY .....: Approx. 1.15
BULK DENSITY.....: Not Applicable
% VOLATILE BY WEIGHT.....: Not Established
EVAPORATION RATE .....: Not Established (Butyl acetate = 1)
VAPOR PRESSURE .....: Not Established
VAPOR DENSITY .....: Not Established (Air = 1)

10. STABILITY AND REACTIVITY:

STABILITY.....: This is a stable material.
HAZARDOUS POLYMERIZATION...: Will not occur.
INCOMPATIBILITIES.....: Strong alkali, oxidizers
INSTABILITY CONDITIONS.....: None Known
DECOMPOSITION PRODUCTS.....: CO, CO2, oxides of sulfur and other potentially toxic fumes.

11. TOXICOLOGICAL INFORMATION:

TOXICITY DATA FOR: Acetic Acid
ACUTE TOXICITY
ORAL LD50.....: 3310 mg/kg (rat)
DERMAL LD50.....: 1060 mg/kg (rabbit) (1)
INHALATION LC50....: LC50: 5620 ppm/1 hr. (mouse) (2)
EYE EFFECTS.....: Corrosive
SKIN EFFECTS.....: Corrosive

1 Supplier Material Safety Data Sheet
2 Occupational Health Services Material Safety Data Sheet

TOXICITY DATA FOR: Aluminum Sulfate
MUTAGENICITY.....: Positive mutagenicity studies in bacterial and mammalian cell assay systems.(1)

1 Registry of Toxic Effects of Chemical Substances (RTECS)

12. ECOLOGICAL INFORMATION:

NO ECOLOGICAL INFORMATION AVAILABLE

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD.....: Recover nonusable free liquid and/or contaminated water, and dispose of in an approved and permitted treatment system. Remove nonusable solid material and/or contaminated soil, for disposal in an approved and permitted landfill. Discharge to sewer may require approval of permitting authority and may require pretreatment.

14. TRANSPORTATION INFORMATION:

TECHNICAL SHIPPING NAME.....: Aqueous Acid Solution containing Sulfuric Acid, Acetic Acid, and Aluminum Sulfate
PRODUCT LABEL.....: HD Fixer Part B

DOT (DOMESTIC SURFACE)

PROPER SHIPPING NAME.....: Corrosive Liquid, N.O.S.
HAZARD CLASS OR DIVISION .....: 8
UN/NA NUMBER.....: UN1760
PACKING GROUP .....: II
DOT PRODUCT RQ lbs (kgs).....: None
HAZARD LABEL(s).....: Corrosive
HAZARD PLACARD(s).....: Corrosive
Limited Quantity Exception may apply to this product, for "inner packagings not over 1.0 L (0.3 gal) for liquids and 1.0 kg (2.2 lb) for solids". 173.154 (b) (1). Each package must conform to the packaging requirements of Subpart B of Part 173 and may not exceed 30 kg (66 lb) gross weight. For further information consult the 49 CFR.

IMO / IMDG CODE (OCEAN)

PROPER SHIPPING NAME.....: Corrosive Liquid, N.O.S.
HAZARD CLASS DIVISION NUMBER...: 8
UN NUMBER.....: UN1760
PACKAGING GROUP.....: II
HAZARD LABEL(s).....: Corrosive
HAZARD PLACARD(s).....: Corrosive

ICAO / IATA (AIR)

PROPER SHIPPING NAME.....: Corrosive Liquid, N.O.S.
HAZARD CLASS DIVISION NUMBER...: 8
UN NUMBER.....: UN1760
SUBSIDIARY RISK.....: None
PACKING GROUP.....: II
HAZARD LABEL(s).....: Corrosive
RADIOACTIVE?.....: Non-Radioactive
PASSENGER AIR - MAX. QTY. .....: 1 L
PASSENGER PACKING INSTRUCTION..: 808
CARGO AIR - MAX. QTY. .....: 30 L
CARGO AIR PACKING INSTRUCTION..: 812

15. REGULATORY INFORMATION:

OSHA STATUS.....: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA STATUS.....: On TSCA Inventory
CERCLA REPORTABLE QUANTITY..: Acetic Acid (CAS# 64-19-7) - 5,000 lbs.; Sulfuric Acid (CAS# 7664-93-9) - 1,000 lbs.; Aluminum Sulfate (CAS# 10043-01-3) - 5,000 lbs.
SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES..: Sulfuric Acid, CAS# 7664-93-9, (1 - 5%)
SECTION 311/312 HAZARD CATEGORIES.....: Immediate Health Hazard; Delayed Health Hazard
SECTION 313 TOXIC CHEMICALS.....: Sulfuric Acid, CAS# 7664-93-9, (1 - 5%)
RCRA STATUS.....: When discarded in its purchased form, this product meets the criteria of corrosivity, and should be managed as a hazardous waste (EPA Hazardous Waste Number D002). (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

COMPONENT NAME /CAS NUMBER	CONCENTRATION	STATE CODE
Aluminum Sulfate 10043-01-3	5-10 %	PA1, PA4, MA, NJ1
Acetic Acid 64-19-7	1-5 %	PA1, PA4, MA, NJ1, NJ3
Sulfuric Acid 7664-93-9	1-5 %	PA1, PA4, MA, NJ1, NJ2, NJ3
Water 7732-18-5	80-85 %	PA3, NJ4

MA = Massachusetts Hazardous Substance List
NJ1 = New Jersey Hazardous Substance List
NJ2 = New Jersey Environmental Hazardous Substance List
NJ3 = New Jersey Special Health Hazardous Substance List
NJ4 = New Jersey Other - included in 5 predominant ingredients > 1%
PA1 = Pennsylvania Hazardous Substance List
PA3 = Pennsylvania Non-hazardous present at 3% or greater.
PA4 = Pennsylvania Environmental Hazardous Substance List.

16. OTHER INFORMATION:

HMIS RATINGS:	Health	Flammability	Reactivity	Personal Prot
	3	0	0	B

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
B=Safety Glasses, Gloves

AGFA's method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS ratings are provided by AGFA as a customer service.

REASON FOR ISSUE.....: New Product
PREPARED BY.....: R. Ruppel-Kerr
APPROVED BY.....: H. W. Gventer
APPROVAL DATE.....: 06/07/2000
SUPERSEDES DATE.....: None
MSDS NUMBER.....: 39871

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of AGFA Corporation. The data on this sheet relates only to the specific material designated herein. AGFA Corporation assumes no legal responsibility for use or reliance upon these data.