

MATERIAL SAFETY DATA SHEET

GLUTARALDEHYDE

SECTION 1:
IDENTIFICATION

Company Name:	CHEMWORLD
Address:	885 Woodstock Rd, Ste 430-111 Roswell, GA 30075
Phone No.	(800) 768-5810
Fax No.	(877) 209-1556
Emergency Phone No.	CHEM-TEL 800-255-3924
Date Prepared:	11/4/02
Date Revised:	5/26/09

SECTION 2:
INGREDIENTS

MATERIAL	CAS NO.	%
GLUTARALDEHYDE	111-30-8	45
METHANOL	67-56-1	≤ 0.45

SECTION 3:
HEALTH HAZARDS

Emergency Overview:	DANGER! KEEP OUT OF REACH OF CHILDREN. CORROSIVE. CAUSES IRREVERSIBLE EYE DAMAGE. CAUSES SKIN BURNS. HARMFUL IF INHALED. MAY BE FATAL IF SWALLOWED. HARMFUL IF ABSORBED THROUGH SKIN. PROLONGED OR FREQUENTLY REPEATED SKIN CONTACT MAY CAUSE ALLERGIC SKIN REACTIONS IN SOME INDIVIDUALS. CAUSES ASTHMATIC SIGNS AND SYMPTOMS IN HYPER-REACTIVE INDIVIDUALS. ASPIRATION HAZARD. CAN ENTER LUNGS AND CAUSE DAMAGE. CAUSES RESPIRATORY TRACT IRRITATION. MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS; CAN CAUSE DEATH IF TOO MUCH IS BREATHED.
Ingestion:	MAY BE FATAL IF SWALLOWED. ORAL TOXICITY OF GLUTARALDEHYDE INCREASES WITH DILUTION. DRINKING WATER FOLLOWING INGESTION OF CONCENTRATED GLUTARALDEHYDE SOLUTIONS CAN ENHANCE THE TOXICITY OF GLUTARALDEHYDE. SWALLOWING MAY RESULT IN IRRITATION OR BURNS OF THE MOUTH, THROAT, AND GASTROINTESTINAL TRACT. SWALLOWING MAY RESULT IN GASTROINTESTINAL IRRITATION OR ULCERATION. EXCESSIVE EXPOSURE MAY CAUSE HEADACHE, DIZZINESS, ANESTHESIA, DROWSINESS, UNCONSCIOUSNESS AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS, INCLUDING DEATH. ASPIRATION INTO THE LUNGS MAY OCCUR DURING INGESTION OR VOMITING, CAUSING TISSUE DAMAGE OR LUNG INJURY.
Inhalation:	VAPOR MAY CAUSE SEVERE IRRITATION OF THE UPPER RESPIRATORY TRACT (NOSE AND THROAT). VAPOR FROM HEATED MATERIAL MAY CAUSE SERIOUS ADVERSE EFFECTS, EVEN DEATH. CASE REPORTS AND MEDICAL SURVEYS LINK ASTHMA AND RESPIRATORY IRRITATION TO GLUTARALDEHYDE EXPOSURE, PRIMARILY IN MEDICAL PERSONNEL. ASTHMA-LIKE SYMPTOMS MAY OCCUR IN PEOPLE PRONE TO RESPIRATORY DISORDERS OR OTHER ALLERGIES. ASTHMA-LIKE SYMPTOMS MAY INCLUDE COUGHING, DIFFICULT BREATHING AND A FEELING OF TIGHTNESS IN THE CHEST. OCCASIONALLY, BREATHING DIFFICULTIES MAY BE LIFE THREATENING.
Skin Contact:	BRIEF CONTACT MAY CAUSE SKIN IRRITATION WITH LOCAL REDNESS. PROLONGED CONTACT MAY CAUSE SEVERE SKIN BURNS. SYMPTOMS MAY INCLUDE PAIN, SEVERE LOCAL REDNESS, SWELLING, AND TISSUE DAMAGE. MAY STAIN SKIN. MAY CAUSE ITCHING. HARMFUL IF ABSORBED THROUGH SKIN.
Skin Sensitization:	SKIN CONTACT MAY CAUSE AN ALLERGIC SKIN REACTION IN A SMALL PROPORTION OF INDIVIDUALS. HAS CAUSED ALLERGIC SKIN REACTIONS WHEN TESTED IN GUINEA PIGS. HAS CAUSED ALLERGIC SKIN REACTIONS WHEN TESTED IN MICE. INHALATION OF VAPORS MAY RESULT IN SKIN SENSITIZATION. IN SENSITIZED INDIVIDUALS, REEXPOSURE TO VERY SMALL AMOUNTS OF VAPOR, MIST, OR LIQUID MAY CAUSE A SEVERE ALLERGIC SKIN REACTION.
Eye Contact:	MAY CAUSE SEVERE IRRITATION WITH CORNEAL INJURY WHICH MAY RESULT IN PERMANENT IMPAIRMENT OF VISION, EVEN BLINDNESS. CHEMICAL BURNS MAY OCCUR. VAPOR MAY CAUSE EYE IRRITATION EXPERIENCED AS MILD DISCOMFORT AND REDNESS.
Other Information:	REPEATED SKIN CONTACT MAY RESULT IN ABSORPTION OF AMOUNTS WHICH

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COULD CAUSE DEATH. MAY CAUSE NAUSEA AND VOMITING.

SECTION 4:

FIRST AID

Ingestion:	IMMEDIATELY CALL A POISON CONTROL CENTER OR DOCTOR. DO NOT INDUCE VOMITING UNLESS TOLD TO DO SO BY A POISON CONTROL CENTER OR DOCTOR. DO NOT GIVE ANY LIQUID TO THE PERSON. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SEEK MEDICAL ATTENTION IMMEDIATELY.
Inhalation:	MOVE PERSON TO FRESH AIR. IF PERSON IS NOT BREATHING, CALL AN EMERGENCY RESPONDER OR AMBULANCE, THEN GIVE ARTIFICIAL RESPIRATION; IF BY MOUTH TO MOUTH USE RESCUER PROTECTION (POCKET MASK ETC). CALL A POISON CONTROL CENTER OR DOCTOR FOR TREATMENT ADVICE. IF BREATHING IS DIFFICULT, OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL.
Skin Contact:	TAKE OFF CONTAMINATED CLOTHING. RINSE SKIN IMMEDIATELY WITH PLENTY OF WATER FOR 15-20 MINUTES. CALL A POISON CONTROL CENTER OR DOCTOR FOR TREATMENT ADVICE. WASH CLOTHING BEFORE REUSE. SHOES AND OTHER LEATHER ITEMS WHICH CANNOT BE DECONTAMINATED SHOULD BE DISPOSED OF PROPERLY. FIRST AID RESPONDERS SHOULD PAY ATTENTION TO SELF-PROTECTION AND USE THE RECOMMENDED PROTECTIVE CLOTHING (CHEMICAL RESISTANT GLOVES, SPLASH PROTECTION).
Eye Contact:	WASH IMMEDIATELY AND CONTINUOUSLY WITH FLOWING WATER FOR AT LEAST 30 MINUTES. REMOVE CONTACT LENSES AFTER THE FIRST 5 MINUTES AND CONTINUE WASHING. OBTAIN PROMPT MEDICAL CONSULTATION, PREFERABLY FROM AN OPHTHALMOLOGIST.
Notes to Physician:	FIRST AID RESPONDERS SHOULD PAY ATTENTION TO SELF-PROTECTION AND USE THE RECOMMENDED PROTECTIVE CLOTHING (CHEMICAL RESISTANT GLOVES, SPLASH PROTECTION) CHEMICAL EYE BURNS MAY REQUIRE EXTENDED IRRIGATION. OBTAIN PROMPT CONSULTATION, PREFERABLY FROM AN OPHTHALMOLOGIST. MAINTAIN ADEQUATE VENTILATION AND OXYGENATION OF THE PATIENT. MAY CAUSE ASTHMA-LIKE (REACTIVE AIRWAYS) SYMPTOMS. BRONCHODILATORS, EXPECTORANTS, ANTITUSSIVES AND CORTICOSTEROIDS MAY BE OF HELP. GLUTARALDEHYDE MAY TRANSIENTLY WORSEN REVERSIBLE AIRWAYS OBSTRUCTION INCLUDING ASTHMA OR REACTIVE AIRWAYS DISEASE. TREAT BRONCHOSPASM WITH INHALED BETA2 AGONIST AND ORAL OR PARENTERAL CORTICOSTEROIDS. PROBABLE MUCOSAL DAMAGE MAY CONTRAINDICATE THE USE OF GASTRIC LAVAGE. DUE TO IRRITANT PROPERTIES, SWALLOWING MAY RESULT IN BURNS/ULCERATION OF MOUTH, STOMACH AND LOWER GASTROINTESTINAL TRACT WITH SUBSEQUENT STRICTURE. ASPIRATION OF VOMITUS MAY CAUSE LUNG INJURY. SUGGEST ENDOTRACHEAL/ESOPHAGEAL CONTROL IF LAVAGE IS DONE. IF BURN IS PRESENT, TREAT AS ANY THERMAL BURN, AFTER DECONTAMINATION. INHALATION OF VAPORS MAY RESULT IN SKIN SENSITIZATION. IN SENSITIZED INDIVIDUALS, REEXPOSURE TO VERY SMALL AMOUNTS OF VAPOR, MIST, OR LIQUID MAY CAUSE A SEVERE ALLERGIC SKIN REACTION. NO SPECIFIC ANTIDOTE. TREATMENT OF EXPOSURE SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITION OF THE PATIENT.
Medical Conditions Aggravated by Exposure:	EXCESSIVE EXPOSURE MAY AGGRAVATE PREEXISTING ASTHMA AND OTHER RESPIRATORY DISORDERS (E.G. EMPHYSEMA, BRONCHITIS, REACTIVE AIRWAYS DYSFUNCTION SYNDROME).

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SECTION 5:

FIRE AND EXPLOSION HAZARD DATA

Flash Point/Method: Upper/Lower Limit in Air: Extinguishing Media:	NONE/TAG CLOSED CUP N.A./N.A. TO EXTINGUISH COMBUSTIBLE RESIDUES OF THIS PRODUCT USE WATER FOG, CARBON DIOXIDE, DRY CHEMICAL OR FOAM.
Procedures:	KEEP PEOPLE AWAY. ISOLATE FIRE AND DENY UNNECESSARY ENTRY. TO EXTINGUISH COMBUSTIBLE RESIDUES OF THIS PRODUCT USE WATER FOG, CARBON DIOXIDE, DRY CHEMICAL OR FOAM. CONTAIN FIRE WATER RUN-OFF IF POSSIBLE. FIRE WATER RUN-OFF, IF NOT CONTAINED, MAY CAUSE ENVIRONMENTAL DAMAGE. REVIEW THE "ACCIDENTAL RELEASE MEASURES" AND THE "ECOLOGICAL INFORMATION" SECTIONS OF THIS MSDS.
Equipment for Firefighters:	WEAR POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS (SCBA) AND PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE FIGHTING HELMET, COAT, TROUSERS, BOOTS, AND GLOVES). AVOID CONTACT WITH THIS MATERIAL DURING FIRE FIGHTING OPERATIONS. IF CONTACT IS LIKELY, CHANGE TO FULL CHEMICAL RESISTANT FIRE FIGHTING CLOTHING WITH SELF-CONTAINED BREATHING APPARATUS. IF THIS IS NOT AVAILABLE, WEAR FULL CHEMICAL RESISTANT CLOTHING WITH SELF-CONTAINED BREATHING APPARATUS AND FIGHT FIRE FROM A REMOTE LOCATION. FOR PROTECTIVE EQUIPMENT IN POST-FIRE OR NON-FIRE CLEAN-UP SITUATIONS, REFER TO THE RELEVANT SECTIONS.
Unusual Hazards:	THIS MATERIAL WILL NOT BURN UNTIL THE WATER HAS EVAPORATED. RESIDUE CAN BURN.
Combustion Products:	UNDER FIRE CONDITIONS SOME COMPONENTS OF THIS PRODUCT MAY DECOMPOSE. THE SMOKE MAY CONTAIN UNIDENTIFIED TOXIC AND/OR IRRITATING COMPOUNDS. COMBUSTION PRODUCTS MAY INCLUDE AND ARE NOT LIMITED TO CARBON MONOXIDE AND CARBON DIOXIDE.

SECTION 6:

ACCIDENTAL RELEASE MEASURES

Personal Precautions:	USE APPROPRIATE SAFETY EQUIPMENT. FOR ADDITIONAL INFORMATION, REFER TO SECTION 8 OF THIS MSDS. EVACUATE AREA. KEEP UPWIND OF SPILL. VENTILATE AREA OF LEAK OR SPILL. ONLY TRAINED AND PROPERLY PROTECTED PERSONNEL MUST BE INVOLVED IN CLEAN-UP OPERATIONS. REFER TO SECTION 7 OF THIS MSDS FOR ADDITIONAL PRECAUTIONARY MEASURES.
Environmental Precautions:	SPILLS OR DISCHARGE TO NATURAL WATERWAYS IS LIKELY TO KILL AQUATIC ORGANISMS. PREVENT FROM ENTERING INTO SOIL, DITCHES, SEWERS, WATERWAYS AND/OR GROUNDWATER.
Procedures for Clean Up:	CONTAIN SPILLED MATERIAL IF POSSIBLE. COLLECT IN SUITABLE AND PROPERLY LABELED CONTAINERS. VERY LOW CONCENTRATIONS (5 PPM OR LESS OF GLUTARALDEHYDE) CAN BE DEGRADED IN A BIOLOGICAL WASTEWATER TREATMENT SYSTEM. THUS, SMALL SPILLS CAN BE FLUSHED WITH LARGE QUANTITIES OF WATER. LARGE QUANTITIES OR 'SLUGS' CAN BE HARMFUL TO THE TREATMENT SYSTEM. THUS, LARGE SPILLS SHOULD BE COLLECTED FOR DISPOSAL. IT MAY ALSO BE POSSIBLE TO DECONTAMINATE SPILLED MATERIAL BY CAREFUL APPLICATION OF SODIUM HYDROXIDE OR SODIUM BISULFITE. DEPENDING ON CONDITIONS, CONSIDERABLE HEAT AND FUMES CAN BE LIBERATED BY THE DECONTAMINATION REACTION. SEE SECTION 13 FOR ADDITIONAL INFORMATION.

SECTION 7:

HANDLING AND STORAGE

Handling:	DO NOT GET IN EYES, ON SKIN, ON CLOTHING. AVOID BREATHING VAPOR. DO NOT SWALLOW. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION. WEAR GOGGLES, PROTECTIVE CLOTHING AND BUTYL OR NITRILE GLOVES. WASH THOROUGHLY WITH SOAP AND WATER AFTER
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Storage:	<p>HANDLING. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE. DO NOT SPRAY OR AEROSOLIZE THE UNDILUTED FORM OF THE PRODUCT. FULL PERSONAL PROTECTIVE EQUIPMENT (INCLUDING SKIN COVERING AND FULL-FACE SCBA RESPIRATOR) IS REQUIRED FOR DILUTIONS OR MIXTURES OF THE PRODUCT USED IN A SPRAY APPLICATION.</p> <p>DO NOT STORE IN: ALUMINUM. CARBON STEEL. COPPER. MILD STEEL. IRON. USE WITHIN 12 MONTHS.</p>
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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Precautionary Measures:	STANDARD INDUSTRIAL HANDLING PRECAUTIONS. WASH THOROUGHLY AFTER HANDLING CHEMICALS.
Engineering Controls:	USE WITH ADEQUATE VENTILATION TO KEEP EXPOSURES BELOW OCCUPATIONAL EXPOSURE LIMITS.
Control Limits:	GLUTARALDEHYDE: ACGIH EXPOSURE LIMIT = 0.05 ppm (CEILING). METHANOL: OSHA PEL = 260 ppm; ACGIH TWA = 200 ppm (SKIN), STEL = 250 ppm (SKIN).
Equipment for Personal Protection:	<p><i>EYE/FACE PROTECTION:</i> USE CHEMICAL GOGGLES. IF EXPOSURE CAUSES EYE DISCOMFORT, USE A FULL-FACE RESPIRATOR. USE A FULL-FACE RESPIRATOR WHEN MATERIAL IS HEATED OR WHEN AEROSOLS/MISTS ARE GENERATED. EYE WASH FOUNTAIN SHOULD BE LOCATED IN IMMEDIATE WORK AREA.</p> <p><i>SKIN PROTECTION:</i> USE PROTECTIVE CLOTHING CHEMICALLY RESISTANT TO THIS MATERIAL. SELECTION OF SPECIFIC ITEMS SUCH AS FACE SHIELD, BOOTS, APRON, OR FULL BODY SUIT WILL DEPEND ON THE TASK. SAFETY SHOWER SHOULD BE LOCATED IN IMMEDIATE WORK AREA. REMOVE CONTAMINATED CLOTHING IMMEDIATELY, WASH SKIN AREA WITH SOAP AND WATER, AND LAUNDRER CLOTHING BEFORE REUSE OR DISPOSE OF PROPERLY. ITEMS WHICH CANNOT BE DECONTAMINATED, SUCH AS SHOES, BELTS AND WATCHBANDS, SHOULD BE REMOVED AND DISPOSED OF PROPERLY.</p> <p><i>HAND PROTECTION:</i> USE GLOVES CHEMICALLY RESISTANT TO THIS MATERIAL. EXAMPLES OF PREFERRED GLOVE BARRIER MATERIALS INCLUDE: BUTYL RUBBER. EXAMPLES OF ACCEPTABLE GLOVE BARRIER MATERIALS INCLUDE: NITRILE/BUTADIENE RUBBER ("NITRILE" OR "NBR"). NOTICE: THE SELECTION OF A SPECIFIC GLOVE FOR A PARTICULAR APPLICATION AND DURATION OF USE IN A WORKPLACE SHOULD ALSO TAKE INTO ACCOUNT ALL RELEVANT WORKPLACE FACTORS SUCH AS, BUT NOT LIMITED TO: OTHER CHEMICALS WHICH MAY BE HANDLED, PHYSICAL REQUIREMENTS (CUT/PUNCTURE PROTECTION, DEXTERITY, THERMAL PROTECTION), POTENTIAL BODY REACTIONS TO GLOVE MATERIALS, AS WELL AS THE INSTRUCTIONS/SPECIFICATIONS PROVIDED BY THE GLOVE SUPPLIER.</p> <p><i>RESPIRATORY PROTECTION:</i> ATMOSPHERIC LEVELS SHOULD BE MAINTAINED BELOW THE EXPOSURE GUIDELINE. WHEN RESPIRATORY PROTECTION IS REQUIRED FOR CERTAIN OPERATIONS, USE AN APPROVED AIR-PURIFYING RESPIRATOR. THIS PRODUCT IS A RESPIRATORY IRRITANT. IF DISCOMFORT IS EXPERIENCED VENTILATION IS NOT ADEQUATE AND AN APPROVED FULL FACE AIR-PURIFYING RESPIRATOR IS RECOMMENDED. IF VAPORS ARE STRONG ENOUGH TO BE IRRITATING TO THE NOSE, OR EYES, THE OEL IS PROBABLY BEING EXCEEDED. SPECIAL VENTILATION OR RESPIRATORY PROTECTION MAY BE REQUIRED. FOR OPERATIONS SUCH AS SPRAYING AND OTHER CONDITIONS SUCH AS EMERGENCIES WHERE THE EXPOSURE GUIDELINE MAY BE GREATLY EXCEEDED, USE AN APPROVED POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS. FOR EMERGENCY RESPONSE OR FOR SITUATIONS WHERE THE ATMOSPHERIC LEVEL IS UNKNOWN, USE AN APPROVED POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS OR POSITIVE-PRESSURE AIR LINE WITH AUXILIARY SELF-CONTAINED AIR SUPPLY. THE FOLLOWING SHOULD BE EFFECTIVE TYPES OF AIR-PURIFYING RESPIRATORS: FULL-FACE ORGANIC VAPOR CARTRIDGE WITH A PARTICULATE PRE-FILTER.</p> <p><i>INGESTION:</i> AVOID INGESTION OF EVEN VERY SMALL AMOUNTS; DO NOT</p>

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CONSUME OR STORE FOOD OR TOBACCO IN THE WORK AREA; WASH HANDS AND FACE BEFORE SMOKING OR EATING.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Odor: pH (undiluted): Specific Gravity: Density: Solubility in Water: Boiling Point: Freezing Point: Percent Volatile: Vapor Pressure (mmHg): Vapor Density: Evaporation Rate:	CLEAR COLORLESS LIQUID FRUITY 3.1 – 4.5 1.12 9.31 lbs/gal COMPLETE 100.7° C (213.3° F) -17° C (1° F) 100 0.20 @ 20° C (ACTIVE INGREDIENT) 1 (air = 1) ~1 (water = 1)
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SECTION 10: STABILITY AND REACTIVITY

Stability: Conditions to Avoid: Hazardous Polymerization: Incompatibility: Hazardous Decomposition Products:	THERMALLY STABLE AT TYPICAL USE TEMPERATURES. ACTIVE INGREDIENT DECOMPOSES AT ELEVATED TEMPERATURES. WILL NOT OCCUR. AVOID CONTACT WITH: AMINES, AMMONIA, STRONG ACIDS, STRONG BASES, STRONG OXIDIZERS. AVOID CONTACT WITH METALS SUCH AS ALUMINUM, CARBON STEEL, COPPER, IRON, MILD STEEL. DECOMPOSITION PRODUCTS DEPEND UPON TEMPERATURE, AIR SUPPLY AND THE PRESENCE OF OTHER MATERIALS.
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SECTION 11: TOXICOLOGICAL INFORMATION

Acute Toxicity: Sensitization: Repeated Dose Toxicity: Chronic Toxicity and Carcinogenicity: Developmental Toxicity: Reproductive Toxicity: Genetic Toxicology:	ORAL LD ₅₀ (MALE RAT) = 1,330 mg/kg; INHALATION LC ₅₀ (RAT, VAPOR) > 22 ppm. SKIN CONTACT MAY CAUSE AN ALLERGIC SKIN REACTION IN A SMALL PROPORTION OF INDIVIDUALS. HAS CAUSED ALLERGIC SKIN REACTIONS WHEN TESTED IN GUINEA PIGS. HAS CAUSED ALLERGIC SKIN REACTIONS WHEN TESTED IN MICE. INHALATION OF VAPORS MAY RESULT IN SKIN SENSITIZATION. IN SENSITIZED INDIVIDUALS, REEXPOSURE TO VERY SMALL AMOUNTS OF VAPOR, MIST, OR LIQUID MAY CAUSE A SEVERE ALLERGIC SKIN REACTION. REPEATED SKIN CONTACT MAY RESULT IN ABSORPTION OF AMOUNTS WHICH COULD CAUSE DEATH. MAY CAUSE NAUSEA AND VOMITING. IN A NTP CHRONIC 2-YEAR INHALATION STUDY ON GLUTARALDEHYDE, NO CARCINOGENICITY WAS SEEN IN RATS OR IN MICE. AN INCREASE IN LARGE GRANULAR LYMPHOCYTES IN FISCHER RATS DOSED WITH GLUTARALDEHYDE FOR TWO YEARS WAS RANDOM OR A SECONDARY CARCINOGENIC EFFECT DUE TO A MODIFYING INFLUENCE ON THE OCCURRENCE OF THIS COMMON NEOPLASM IN THIS RAT STRAIN. GLUTARALDEHYDE HAS BEEN TOXIC TO THE FETUS IN LAB ANIMALS AT DOSES TOXIC TO THE MOTHER. DID NOT CAUSE BIRTH DEFECTS IN LABORATORY ANIMALS. IN ANIMAL STUDIES, GLUTARALDEHYDE DID NOT INTERFERE WITH REPRODUCTION. FOR GLUTARALDEHYDE, IN VITRO GENETIC TOXICITY STUDIES WERE NEGATIVE IN SOME CASES AND POSITIVE IN OTHER CASES. ANIMAL GENETIC TOXICITY STUDIES WERE PREDOMINANTLY NEGATIVE.
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SECTION 12:

ECOLOGICAL INFORMATION

Chemical Fate:	FOR GLUTARALDEHYDE: BIOCONCENTRATION POTENTIAL IS LOW (BCF LESS THAN 100 OR LOG Pow < 3). POTENTIAL FOR MOBILITY IN SOIL IS HIGH (Koc BETWEEN 50 AND 150). GIVEN ITS VERY LOW HENRY'S CONSTANT, VOLATILIZATION FROM NATURAL BODIES OF WATER OR MOIST SOIL IS NOT EXPECTED TO BE AN IMPORTANT FATE PROCESS.
Ecotoxicity:	FOR METHANOL: BIOCONCENTRATION POTENTIAL IS LOW (BCF LESS THAN 100 OR LOG Pow < 3). POTENTIAL FOR MOBILITY IN SOIL IS VERY HIGH (Koc BETWEEN 0 AND 50). FOR GLUTARALDEHYDE: MATERIAL IS HIGHLY TOXIC TO AQUATIC ORGANISMS ON AN ACUTE BASIS (LC ₅₀ /EC ₅₀ BETWEEN 0.1 AND 1MG/L IN THE MOST SENSITIVE SPECIES TESTED). MATERIAL IS MODERATELY TOXIC TO BIRDS ON AN ACUTE BASIS (LD ₅₀ BETWEEN 51 AND 500 MG/KG). MATERIAL IS PRACTICALLY NON-TOXIC TO BIRDS ON A DIETARY BASIS (LC ₅₀ > 5000 PPM).
Aquatic Toxicity:	FOR METHANOL: MATERIAL IS PRACTICALLY NON-TOXIC TO AQUATIC ORGANISMS ON AN ACUTE BASIS (LC ₅₀ /EC ₅₀ >100 MG/L IN THE MOST SENSITIVE SPECIES TESTED). FOR GLUTARALDEHYDE: LC ₅₀ (FATHEAD MINNOW) = 5.4 mg/l; LC ₅₀ (DAPHNIA MAGNA) = 5.0 mg/l; 120 Hr. EC ₅₀ (GREEN ALGA) = 0.81 mg/l. FOR METHANOL: LC ₅₀ (RAINBOW TROUT) = 17,000 MG/L; LC ₅₀ (DAPHNIA MAGNA) > 10,000 mg/l.

SECTION 13:

DISPOSAL CONSIDERATIONS

General Considerations: Procedures:	THIS PRODUCT IS SUBJECT TO PESTICIDE DISPOSAL REGULATIONS. DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. ALL DISPOSAL PRACTICES MUST BE IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL LAWS AND REGULATIONS. REGULATIONS MAY VARY IN DIFFERENT LOCATIONS. WASTE CHARACTERIZATIONS AND COMPLIANCE WITH APPLICABLE LAWS ARE THE RESPONSIBILITY SOLELY OF THE WASTE GENERATOR. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. FOR UNUSED & UNCONTAMINATED PRODUCT, THE PREFERRED OPTIONS INCLUDE SENDING TO A LICENSED, PERMITTED: RECYCLER. RECLAIMER, INCINERATOR OR OTHER THERMAL DESTRUCTION DEVICE. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2.
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SECTION 14:

TRANSPORT INFORMATION

Shipping Name:	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (GLUTARALDEHYDE)
Primary Hazard Group:	8
Identification No.:	UN3265
Packing Group:	II
2004 NAERG No.:	153

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SECTION 15: REGULATORY INFORMATION

<u>Regulation</u>	<u>Material</u>	<u>RQ</u>	<u>Max. %</u>
CERCLA (40 CFR302.4):	NONE		
SARA 302 (Sect. 355, Appendix A):	NONE	TPQ	Max. %
SARA 311/312:	<u>Categories</u> ACUTE, DELAYED HEALTH		
SARA 313 (40 CFR 372.45):	NONE		Max. %
CWA (40 CFR 401.15):	NONE		
RCRA (40 CFR 261): Notes:	NONE SUBJECT TO PESTICIDE DISPOSAL REGULATIONS.		
OSHA (29 CFR 1910.1200):	ALL COMPONENTS LISTED UNDER THIS STANDARD ARE SHOWN IN SECTION 2 OF THIS MSDS.		
TSCA:	ALL COMPONENTS OF THIS PRODUCT ARE ON THE TSCA INVENTORY OR ARE EXEMPT FROM TSCA INVENTORY REQUIREMENTS.		

SPECIAL STATE REGULATIONS

<u>STATE</u>	<u>INGREDIENT</u>	<u>%</u>	<u>REGULATORY DESIGNATION</u>
CA, MA, MN, NJ, PA	GLUTARALDEHYDE	45	HAZARDOUS SUBSTANCE LIST

SECTION 16 OTHER INFORMATION

SUGGESTED HAZARD RATINGS

<u>NFPA*</u>	<u>HAZARD</u>	<u>HMIS*</u>
3	HEALTH (Blue)	3
1	FIRE (Red)	1
0	REACTIVITY (Yellow)	0
	PERSONAL PROTECTION	H
	SPECIAL HAZARDS	

*Notes: 0 = Insignificant; 1 = Slight; 2 = Moderate; 3 = High; 4 = Extreme

The data contained in this Material Safety Data Sheet has been prepared based upon an evaluation of the ingredients in the product, their concentration in the product and potential interactions. The information is offered in good faith and is believed to be accurate. It is furnished to the customer who is urged to study it carefully to become aware of hazards, if any, in the storage, handling, use and disposal of the product; and to insure his employees are properly informed and advised of all safety precautions required. The information is furnished for compliance with the "Occupational Safety and Health Act" of 1970, the "Hazards Communication Act" of 1983 as well as various other Federal, State and Local regulations. Use or dissemination of all or part of this information for any other purpose is prohibited by law.