

6218
6214
6102
6201

#0304

Material Safety Data Sheet

Hazard Rating:	NFPA	CODE TRANSLATION
Health:	3	0 = Minimal Hazard
Flammability:	0	1 = Slight Hazard
Reactivity:	1	2 = Moderate Hazard
Special:		3 = Severe Hazard
		4 = Extreme Hazard

FORMULA DL-1545

SECTION I: IDENTIFICATION

Effective Date: 7/15/86
 Name and Address: CONDR TECHNOLOGIES, INC. 602 JEFFERS CIRCLE, SUITE 111EXTON, PA 19341-2539
 Revised: JULY 31, 2003
 Phone: (610) 280-0450
 Emergency Phone: CHEMTREC (800) 424-9300

Chemical Name: AQUEOUS GLUTARALDEHYDE SOLUTION Formula: $\text{OHCC}_3\text{H}_5\text{CHO}$
 Synonyms: 1,5-PENTANEDIAL Chemical Family: ALDEHYDES
 D.O.T. Shipping Name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (CONTAINS GLUTARALDEHYDE)
 D.O.T. Hazard Class: 8 ID No.: UN-3265 Packing Group: PG-II (ERG-60)

SECTION II: INGREDIENTS

A. Hazardous Ingredients	CAS NO.	WT. %	TLV
GLUTARALDEHYDE	111-30-8	45	0.2 ppmv, ceiling
METHANOL	67-56-1	<0.1	200 ppm TWA(skin)
B. Other Ingredients		%*	TLV
WATER		BAL.	NONE ESTAB.

SECTION III: PHYSICAL PROPERTIES

Boiling Point: 102.1°C, (215.7°F) Specific Gravity: 1.114-1.122
 Percent Volatile (volume): 100% pH (undiluted): 3.1-4.5
 Vapor Pressure (mm Hg): 14.7 Solubility in Water: COMPLETE
 Vapor Density (air=1): >1 Evaporation Rate (water=1): APPROX. 1
 Appearance and Odor: CLEAR LIQUID WITH A SHARP PUNGENT ODOR

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used): NON-FLAMMABLE (AQUEOUS SYSTEM)
 Flammable Limits in Air (lower): N.A. (upper): N.A.
 Extinguishing Media: IF WATER IS EVAPORATED, REMAINING MATERIAL CAN BURN. USE WATER SPRAY, CARBON DIOXIDE, DRY CHEMICAL, ALCOHOL TYPE OR UNIVERSAL-TYPE FOAM APPLIED BY THE MANUFACTURER'S RECOMMENDED TECHNIQUES.
 Special Fire Fighting Procedures: SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING SHOULD BE AVAILABLE FOR FIREFIGHTERS. VAPORS CAN BE VERY IRRITATING.
 Unusual Fire or Explosion Hazards: NONE KNOWN

Methanol

IRIS - RFD 5×10^{-1}

3.47 mg/L

$$\frac{.5 \times 70}{2 + [0.0175] \times 2}$$

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SECTION V: HEALTH HAZARD DATA

- A. TLV and Source: AS GLUTARALDEHYDE - 0.2 ppmv, ceiling OSHA AND ACGIH 1988-89. IN 1995 UNION CARBIDE CORPORATION ESTABLISHED A 0.1 PPMV CEILING. AS METHANOL - 200 ppm TWA,(skin), OSHA AND ACGIH 1988-89.
- B. Effects of a Single Overexposure by:
1. Ingestion: MODERATELY TOXIC. MAY CAUSE MODERATE TO SEVERE IRRITATION AND POSSIBLY CHEMICAL BURNS OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH WITH ABDOMINAL AND CHEST DISCOMFORT OR PAIN, NAUSEA, VOMITING, DIARRHEA, DIZZINESS, FAINTNESS, DROWSINESS, THIRST, WEAKNESS, CIRCULATORY SHOCK AND COLLAPSE AND POSSIBLE COMA.
 2. Inhalation: VAPORS ARE IRRITATING TO THE RESPIRATORY TRACT CAUSING STINGING SENSATIONS IN THE NOSE AND THROAT, DISCHARGE AND POSSIBLE BLEEDING FROM THE NOSE, COUGHING, CHEST DISCOMFORT AND TIGHTNESS, DIFFICULTY WITH BREATHING AND HEADACHE. THE GLUTARALDEHYDE ODOR DETECTION LIMIT OF 0.04 ppmv IS LESS THAN THE TLV OF 0.2 ppmv AND IRRITATION THRESHOLD OF 0.3 ppmv.
 3. Skin Contact: BRIEF CONTACT CAUSES ITCHING TO LOCAL REDDENING AND SWELLING. PROLONGED CONTACT MAY RESULT IN PAIN, SEVERE INFLAMMATION AND POSSIBLE SKIN BURNS.
 4. Eye Contact: LIQUID CAUSES SEVERE AND PERSISTENT CONJUNCTIVITIS; EXCESS REDNESS AND SWELLING WITH PROFUSE DISCHARGE. SEVERE CORNEAL INJURY MAY DEVELOP, WHICH COULD PERMANENTLY DAMAGE VISION IF PROMPT FIRST-AID AND MEDICAL TREATMENT ARE NOT OBTAINED. VAPORS MAY CAUSE A STINGING SENSATION WITH EXCESS TEAR PRODUCTION, BLINKING, AND POSSIBLY A SLIGHT EXCESS REDNESS OF THE CONJUNCTIVA; **BUT NOT INJURY.**
- C. Effects of Repeated Overexposures: MAY CAUSE SKIN SENSITATION IN A SMALL PROPORTION OF INDIVIDUALS WHICH WILL APPEAR AS A TYPICAL ALLERGIC CONTACT DERMATITIS. THIS USUALLY RESULTS FROM CONTACT WITH LIQUID, BUT A REACTION TO THE VAPOR OCCASIONALLY OCCURS. BREATHING OF VAPOR MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC LUNG DISEASE.
- D. Emergency and First Aid Procedures for:
1. Ingestion: DO NOT GIVE ANYTHING TO DRINK. GET MEDICAL ATTENTION WITH **URGENCY**. DO NOT INDUCE VOMITING.
 2. Inhalation: REMOVE VICTIM TO FRESH AIR. GIVE OXYGEN IF BREATHING DIFFICULT. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.
 3. Skin Contact: WASH WITH PLENTY OF WATER FOLLOWED BY SOAP AND WATER. IMMEDIATELY REMOVE CONTAMINATED CLOTHING AND HAVE IT COMMERCIALY LAUNDERED BEFORE REUSE. IF REDNESS OR SYMPTOMS PERSIST, GET MEDICAL ATTENTION.
 4. Eye Contact: IMMEDIATELY FLUSH WITH CLEAR WATER FOR 15 MINUTES AND THEN GET IMMEDIATE MEDICAL ATTENTION, PREFERABLY BY AN EYE SPECIALIST.

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- E. Notes to Physician: MOST OF THE EFFECTS OF GLUTARALDEHYDE ARE DUE TO ITS INTENSELY IRRITATING PROPERTIES. DUE TO THE POTENTIAL FOR ORGAN PERFORATION, CAREFUL GASTRIC LAVAGE IS NECESSARY. THERE IS NO SPECIFIC ANTIDOTE AND THE TREATMENT MUST BE DICTATED BY THE CLINICAL CONDITION OF THE PATIENT.

SECTION VI: PERSONNEL PROTECTION DATA

Respiratory Protection: NOT NORMALLY REQUIRED UNLESS PRODUCT IS OPENLY HANDLED IN CONFINED AREAS WHERE HIGH CONCENTRATIONS OF VAPOR COULD OCCUR. (See Sections IV and V,B,2.)
Ventilation: NORMAL (MECHANICAL) ROOM VENTILATION IS SATISFACTORY FOR MAINTAINING CONCENTRATIONS BELOW THE MAXIMUM TLV LEVEL IN MOST SITUATIONS WHERE THE MATERIAL IS HANDLED NORMALLY.

Protective Gloves: RUBBER, NITRILE, BUTYL, OR POLYETHYLENE.
Eye Protection: MONOGOGGLES OR GOGGLES AND FACE SHIELD.

Other Protective Equipment: RUBBER BOOTS AND CHEMICAL APRON. EYEWASH STATION AND SAFETY SHOWER IN AREA OF USE.

SECTION VII: REACTIVITY DATA

- A. Product Stability: STABLE
Conditions to Avoid: HIGH TEMPERATURES (>200°F) WHICH WILL EVAPORATE WATER.
- B. Incompatibility: STRONG ACIDS AND ALKALIES CATALYZE AN ALDOL-TYPE CONDENSATION WHICH IS EXOTHERMIC BUT NOT EXPECTED TO BE VIOLENT.
- C. Hazardous Combustion or Decomposition Products: OXIDES OF CARBON.
- D. Hazardous Polymerization: WILL NOT OCCUR
Conditions to Avoid: POLYMERIZATION CAN OCCUR BUT AT TEMPERATURES <200°F, IT IS NOT HAZARDOUS.

SECTION VIII: ENVIRONMENTAL DATA

- A. Spill or Leak Procedures: TOXIC TO FISH. DISCHARGE TO NATURAL WATERS MUST BE AVOIDED. VERY LOW CONCENTRATIONS (<20 ppm) CAN BE EASILY DEGRADED WITH NO EFFECT IN A BIOLOGICAL TREATMENT SYSTEM. THUS, SMALL AMOUNTS MAY BE FLUSHED WITH LARGE QUANTITIES OF WATER TO A SEWER SYSTEM. LARGE AMOUNTS MAY BE HARMFUL TO A TREATMENT SYSTEM AND SHOULD BE COLLECTED FOR DISPOSAL. RELATIVELY HIGHLY CONCENTRATED SOLUTIONS (SUCH AS 1/2% - 1%) MAY BE PARTIALLY DECONTAMINATED BY THE APPLICATION OF DIBASIC AMMONIUM PHOSPHATE AND MIXED FOR 24 HOURS. MORE DILUTE SOLUTIONS MAY BE DEACTIVATED WITH CAUSTIC SODA AT pH 11.0 FOR 24 HOURS OR pH 12.0 FOR ABOUT 3 HOURS.
- B. Waste Disposal: DISPOSE OF WASTE CONCENTRATES BY ATOMIZATION INTO A VERY HOT INCINERATOR FIRE OR MIX WITH A SUITABLE FLAMMABLE SOLVENT AND INCINERATE WHERE PERMITTED BY FEDERAL, STATE OF LOCAL REGULATIONS. HIGH WATER CONTENT MAY DAMPEN FLAME.

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C. Other Environmental Data: FISH AND WILDLIFE DATA

<u>Species</u>	<u>NO EFFECT Level, mg/l</u>	<u>48hr LC₅₀ (mg/l as product)</u>	<u>96hr LC₅₀ (mg/l as product)</u>
RAINBOW TROUT	20.0	36.2	26.3
BLUE GILL SUNFISH	11.1	26.3	24.9
OYSTER LARVAE	-	1.2	-
GREEN CRABS	-	611.0	258.0
GRASS SHRIMP	-	222.0	22.8
DAPHNIA (Water Flea)	5.6	12.8	-

	<u>8 Day Dietary LC₅₀ (ppm as product)</u>	<u>Acute Oral LD₅₀ (mg/kg as product)</u>
BOBWHITE QUAIL	11,100	-
MALLARD DUCK	11,100	1036

SECTION IX: SPECIAL PRECAUTIONS

- A. Handling and Storage: STORE IN A COOL DRY PLACE. KEEP CONTAINERS TIGHTLY CLOSED WHEN NOT IN USE AND FOLLOW ALL RECOMMENDED SAFETY PRECAUTIONS WHEN HANDLING THE MATERIAL.
- B. Other Precautions: THIS PRODUCT HAS BEEN DESIGNED AS AN ANTIMICROBIAL AGENT FOR USE IN SPECIFIC TYPES OF COOLING WATER CIRCUITS AND SHOULD ONLY BE USED IN ACCORDANCE WITH THE INSTRUCTIONS STATED ON THE PRODUCT LABEL AND PROVIDED BY THE TECHNICAL REPRESENTATIVE SERVICING THE FACILITY. IT MAY NOT BE USED FOR THE TREATMENT OF POTABLE WATER.

The data contained in this Material Safety Data Sheet has been prepared based upon an evaluation of the ingredients contained 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 to comply with the "Occupational Safety and Health Act" (OSHA) hazard communication regulation [Rule 29 CFR 1910.1220 (g) (2)]. Use or dissemination of all or part of this information for any other purpose is not permitted.