Valid 05/2003 - 07/2003 Aldrich Chemical Co., Inc. 1001 West St. Paul Milwaukee, WI 53233 USA Phone: 414-273-3850 MATERIAL SAFETY DATA SHEET SECTION 1. - - - - - - - - CHEMICAL IDENTIFICATION- - - - - - - -CATALOG #: 135011 NAME: CATECHOL, 99+% SECTION 2. - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -CAS #: 120-80-9 MF: C6H6O2 EC NO: 204-427-5 SYNONYMS BENZENE, O-DIHYDROXY- * O-BENZENEDIOL * 1,2-BENZENEDIOL * CATECHIN (PHENOL) * CATECHOL (ACGIH) * CATECHOL (PHENOL) * C.I. 76500 * C.I. OXIDATION BASE 26 * O-DIHYDROXYBENZENE * 1,2-DIHYDROXYBENZENE * O-DIOXYBENZENE * O-DIPHENOL * DURAFUR DEVELOPER C * FOURAMINE PCH * FOURRINE 68 * O-HYDROQUINONE * O-HYDROXYPHENOL * 2-HYDROXYPHENOL * KATECHOL (CZECH) * NCI-C55856 * OXYPHENIC ACID * PELAGOL GREY C * O-PHENYLENEDIOL * PHTHALHYDROQUINONE * PYROCATECHIN * PYROCATECHINE * PYROKATECHIN (CZECH) * SECTION 3. - - - - - - - HAZARDS IDENTIFICATION - - - - - - -LABEL PRECAUTIONARY STATEMENTS CORROSIVE CAUSES BURNS. HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED. READILY ABSORBED THROUGH SKIN. TARGET ORGAN(S): LIVER, KIDNEYS NERVES IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION. DO NOT BREATHE DUST. AUTOIGNITION TEMPERATURE: SECTION 4. - - - - - - - - FIRST-AID MEASURES- - - - - - - - -IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES OR SKIN WITH COPIOUS AMOUNTS OF WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS. SECTION 5. - - - - - - - - FIRE FIGHTING MEASURES - - - - - - - - -EXTINGUISHING MEDIA CARBON DIOXIDE, DRY CHEMICAL POWDER OR APPROPRIATE FOAM. SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES. SECTION 6. - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - -WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY RUBBER GLOVES. SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL. AVOID RAISING DUST. SECTION 7. - - - - - - - HANDLING AND STORAGE- - - - - - -REFER TO SECTION 8. SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING. SAFETY SHOWER AND EYE BATH. USE ONLY IN A CHEMICAL FUME HOOD. DO NOT BREATHE DUST.

CENTRAL NERVOUS SYSTEM KIDNEYS **LTVER** THIS PRODUCT IS OR CONTAINS A COMPONENT THAT IS NOT CLASSIFIABLE AS TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH, NTP OR EPA CLASSIFICATION. RTECS #: UX1050000 PYROCATECHOL TOXICITY DATA ORL-RAT LD50:260 MG/KG AFREAW 3,197,1951 ORL-MUS LD50:260 MG/KG AFREAW 3,197,1951 IPR-MUS LD50:68 MG/KG PHTOEH 64,247,1989 SCU-MUS LD50:247 MG/KG INHEAO 5,143,1967 ORL-DOG LD50:130 MG/KG IPSTB3 3,93,1976 ORL-CAT LD50:100 MG/KG IPSTB3 3,93,1976 SKN-RBT LD50:800 MG/KG AIHAAP 37,596,1976 ORL-GPG LD50:210 MG/KG AFREAW 3,197,1951 ORL-MAM LD50:240 MG/KG TPKVAL 15,136,1979 TARGET ORGAN DATA PERIPHERAL NERVE AND SENSATION (SPASTIC PARALYSIS WITH/WITHOUT SENSORY CH BEHAVIORAL (ALTERED SLEEP TIME) BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD) BEHAVIORAL (CHANGE IN MOTOR ACTIVITY) BEHAVIORAL (MUSCLE CONTRACTION OR SPASTICITY) LUNGS, THORAX OR RESPIRATION (DYSPNAE) BLOOD (LUEKOPENIA) BLOOD (METHEMOGLOBINEMIA-CARBOXHEMOGLOBINEMIA) SKIN AND APPENDAGES (PRIMARY IRRITATION) MATERNAL EFFECTS (OVARIES, FALLOPIAN TUBES) EFFECTS ON FERTILITY (LITTER SIZE) NUTRITIONAL AND GROSS METABOLIC (WEIGHT LOSS OR DECREASED WEIGHT GAIN) ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES (RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR COMPLETE INFORMATION. SECTION 12. - - - - - - - ECOLOGICAL INFORMATION - - - - - - - -DATA NOT YET AVAILABLE. SECTION 13. - - - - - - - DISPOSAL CONSIDERATIONS - - - - - -CONTACT A LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS. SECTION 14. - - - - - - - - TRANSPORT INFORMATION - - - - - - -CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION. SECTION 15. - - - - - - REGULATORY INFORMATION - - - - - - - -EUROPEAN INFORMATION EC INDEX NO: 604-016-00-4 CORROSIVE R 21/22 HARMFUL IN CONTACT WITH SKIN AND IF SWALLOWED. R 36/38 IRRITATING TO EYES AND SKIN. S 22 DO NOT BREATHE DUST. S 26 IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE. S 37 WEAR SUITABLE GLOVES.

REVIEWS, STANDARDS, AND REGULATIONS OEL=MAK ACGIH TLV-CONFIRMED ANIMAL CARCINOGEN DTLVS* TLV/BEI,1999 ACGIH TLV-TWA 5 PPM (SKIN) DTLVS* TLV/BEI,1999 IARC CANCER REVIEW: ANIMAL SUFFICIENT EVIDENCE IMEMDT 71,433,1999 IARC CANCER REVIEW: ANIMAL INADEQUATE EVIDENCE IMEMDT 15,155,1977 IARC CANCER REVIEW: HUMAN NO ADEOUATE DATA IMEMDT 15,155,1977 IARC CANCER REVIEW: HUMAN NO ADEQUATE DATA IMEMDT 71,433,1999 IARC CANCER REVIEW: GROUP 2B IMEMDT 71,433,1999 OEL-AUSTRALIA: TWA 5 PPM (20 MG/M3), JAN1993 OEL-AUSTRIA: MAK 5 PPPM (20 MG/M3), JAN1999 OEL-BELGIUM: TWA 5 PPM (23 MG/M3), JAN1993 OEL-DENMARK: TWA 5 PPM (20 MG/M3), JAN1999 OEL-FINLAND: TWA 5 PPM (22 MG/M3), STEL 10 PPM (45 MG/M3), JAN1999 OEL-FRANCE: VME 5 PPM (20 MG/M3), JAN1999 OEL-THE NETHERLANDS: MAC-TGG 5 PPM (20 MG/M3), JAN1999 OEL-NORWAY: TWA 5 PPM (20 MG/M3), JAN1999 OEL-SWEDEN: NGV 5 PPM (20 MG/M3), KTV 10 PPM (40 MG/M3), SKIN, JAN1999 OEL-SWITZERLAND: MAK-W 5 PPM (23 MG/M3), JAN1999 OEL-UNITED KINGDOM: TWA 5 PPM (23 MG/M3), SEP2000 OEL IN ARGENTINA, BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV; OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV NIOSH REL TO CATECHOL-AIR:10H TWA 5 PPM (SK) NIOSH* DHHS #92-100,1992 NOHS 1974: HZD M1763; NIS 4; TNF 147; NOS 6; TNE 642 NOES 1983: HZD M1763; NIS 8; TNF 700; NOS 15; TNE 13516; TFE 5799 EPA TSCA SECTION 8(B) CHEMICAL INVENTORY EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES ON EPA IRIS DATABASE EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 2001 U.S. INFORMATION THIS PRODUCT IS SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS. SECTION 16. - - - - - - - OTHER INFORMATION- - - - - - - - - -THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA, ALDRICH, FLUKA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE. COPYRIGHT 2001 SIGMA-ALDRICH CO. LICENSE GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.