

ATTN: SAFETY DIRECTOR

EMERGENCY PHONE 1-314-771-5765

E 05/27/97 CUST#: 2-097-94816 PO#: VISA 05/23/97

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UNIV OF WISC-WHITEWATER PURCHASING OFFICE 800 W MAIN ST WHITEWATER WI 53190-170

53190-1705

PAGE SHEET MATERIAL SAFETY DATA - - CHEMICAL IDENTIFICATION- -SECTION 1. - -HT501-320 CATALOG #: FORMALIN SOLUTION, NEUTRAL BUFFERED NAME: SECTION 2. - - - - COMPOSITION/INFORMATION ON INGREDIENTS -50-00-0 200-001-8 CAS #: EC NO: ADDITIONAL INFORMATION COMPONENT\_\_\_ CAS NUMBER 50-00-0 67-56-1 10049-21-5 7558-79-4 7732-18-5 PERCENT 3.7-4.0% 1.0-1.5% 0.4% 0.65% FORMALDEHYDE METHANOL SODIUM PHOSPHATE MONOBASIC SODIUM PHOSPHATE DIBASIC WATER NONYMS
ALDEHYDE FORMIQUE (FRENCH) \* ALDEHYD MRAVENCI (CZECH) \* ALDEIDE
FORMICA (ITALIAN) \* BFV \* FANNOFORM \* FORMALDEHYDE (ACGIH:OSHA) \*
FORMALDEHYDE, SOLUTIONS, FLAMMABLE (UN1198) (DOT) \* FORMALDEHYDE,
SOLUTIONS (UN2209) (DOT) \* FORMALDEHYD (CZECH, POLISH) \* FORMALDEHYDE,
GAS \* FORMALIN \* FORMALIN 40 \* FORMALINA (ITALIAN) \* FORMALINE
(GERMAN) \* FORMALIN-LOESUNGEN (GERMAN) \* FORMALITH \* FORMIC ALDEHYDE \*
FORMOL \* FYDE \* LYSOFORM \* METHALDEHYDE \* METHANAL \* METHYL ALDEHYDE
\* METHYLENE OXIDE \* MORBICID \* NCI-C02799 \* OPLOSSINGEN (DUTCH) \*
OXOMETHANE \* OXYMETHYLENE \* PARAFORM \* RCRA WASTE NUMBER U122 \*
SUPERLYSOFORM \* UN1198 (DOT) \* UN2209 (DOT) \* SYNONYMS

SECTION 3. - - - - - - - HAZARDS IDENTIFICATION - -

LABEL PRECAUTIONARY STATEMENTS

TOXIC
MAY CAUSE CANCER.
MAY CAUSE CANCER.
MAY CAUSE HERITABLE GENETIC DAMAGE.
TOXIC BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
MAY CAUSE SENSITIZATION BY INHALATION AND SKIN CONTACT.
CONTAINS FORMALDEHYDE
POTENTIAL CANCER HAZARD.
READILY ABSORBED THROUGH SKIN. LACHRYMATOR. COMBUSTIBLE. TARGET ORGAN(S): KIDNEYS

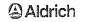
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE). IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.

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HT501-320 CATALOG #: FORMALIN SOLUTION, NEUTRAL BUFFERED NAME: WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION. DO NOT BREATHE VAPOR. - - - - FIRST-AID MEASURES- - -SECTION 4. - - - -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. ASSURE ADEQUATE FLUSHING OF THE EYES BY SEPARATING THE EYELIDS WITH FINGERS. WITH FINGERS.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS. CALL A PHYSICIAN IMMEDIATELY.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
DISCARD CONTAMINATED SHOES. SECTION 5. - - - - - - FIRE FIGHTING MEASURES - - - -EXTINGUISHING MEDIA WATER MAY BE EFFECTIVE FOR COOLING, BUT MAY NOT EFFECT EXTINGUISHMENT. 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.
USE WATER SPRAY TO COOL FIRE-EXPOSED CONTAINERS.
COMBUSTIBLE LIQUID. UNUSUAL FIRE AND EXPLOSIONS HAZARDS EMITS TOXIC FUMES UNDER FIRE CONDITIONS. SECTION 6. - - - - - - ACCIDENTAL RELEASE MEASURES- -EVACUATE AREA.
WEAR SELF-CONTAINED BREATHING APPARATUS, RUBBER BOOTS AND HEAVY
RUBBER GLOVES.
ABSORB ON SAND OR VERMICULITE AND PLACE IN CLOSED CONTAINERS FOR VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE. - - - HANDLING AND STORAGE- -SECTION 7. - -REFER TO SECTION 8. SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - -WEAR APPROPRIATE NIOSH/MSHA-APPROVED RESPIRATOR, CHEMICAL-RESISTANT GLOVES, SAFETY GOGGLES, OTHER PROTECTIVE CLOTHING. USE ONLY IN A CHEMICAL FUME HOOD. SAFETY SHOWER AND EYE BATH.

SAFETY

MATERIAL

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CATALOG #: NAME:

HT501-320 FORMALIN SOLUTION, NEUTRAL BUFFERED

DO NOT BREATHE VAPOR.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
KEEP TIGHTLY CLOSED.
KEEP AWAY FROM HEAT AND OPEN FLAME.
STORE IN A COOL DRY PLACE.
KEEP AWAY FROM HEAT AND OPEN FLAME.
STORE IN A COOL DRY PLACE.

- - - PHYSICAL AND CHEMICAL PROPERTIES -SECTION 9. - -

APPEARANCE AND ODOR LIQUID.

PHYSICAL PROPERTIES BOILING POINT: FLASHPOINT

APPROX 212'F 185 F 85 C BY: CLOSED CUP

EXPLOSION LIMITS IN AIR: UPPER

73% 7.0%

LOWER VAPOR PRESSURE: SOLUBILITY: 25 MM HG

WATER -SOLUBLE SPECIFIC GRAVITY: VAPOR DENSITY: 1. 1.900 1.02 (AIR=1)

SECTION 10. - - - - - - - STABILITY AND REACTIVITY -

INCOMPATIBLE WITH: ANILINE, PHENOL, ISOCYANATES, ANHYDRIDES. STRONG ACIDS STRONG BASES REACTS VIOLENTLY WITH: STRONG OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS TOXIC FUMES OF: CARBON MONOXIDE, CARBON DIOXIDE

- - - TOXICOLOGICAL INFORMATION - - -SECTION 11. - -

TOXIC BY INHALATION, INGESTION OR SKIN ABSORPTION.
MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES
AND UPPER RESPIRATORY TRACT, EYES AND SKIN.
INHALATION MAY RESULT IN SPASM, INFLAMMATION AND EDEMA OF THE
LARYNX AND BRONCHI, CHEMICAL PNEUMONITIS AND PULMONARY EDEMA.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING. ACUTE EFFECTS TOXIC BY IN

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FORMALIN SOLUTION, NEUTRAL BUFFERED
       NAME:
      MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTIONS. EXPOSURE CAN CAUSE: COUGHING, CHEST PAINS, DIFFICULTY IN BREATHING. PULMONARY EDEMA. EFFECTS MAY BE DELAYED. GASTROINTESTINAL DISTURBANCES MAY CAUSE CONVULSIONS. READILY ABSORBED THROUGH SKIN.
CHRONIC EFFECTS
CARCINOGEN.
MAY ALTER GENETIC MATERIAL.
TARGET ORGAN(S):
        KIDNEYS
        LIVER
        HEART
        TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.
RTECS #: LP8925000
FORMALDEHYDE
IRRITATION DATA

SKN-HMN 150 UG/3D-I MLD
EYE-HMN 4 PPM/5M
EYE-HMN 1 PPM/6M NSE MLD
SKN-RBT 2 MG/24H SEV
SKN-RBT 540 MG OPEN MLD
SKN-RBT 50 MG/24H MOD
EYE-RBT 750 UG/24H SEV
EYE-RBT 750 UG/24H SEV
EYE-RBT 10 MG SEV
                                                                                                                                                                                         85DKA8 -,127,77
IAPWAR 4,79,61
AIHAAP 44,463,83
85JCAE -,264,86
UCDS** 4/21/67
TXAPA9 21,369,72
85JCAE -,264,86
AJOPAA 29,1363,46
TXAPA9 55,501,80
                                                                                                                                                                                          29ZWAE -,328,68
85DCAI 2,7347,88
FCTOD7 26,447,88,74
GTPZAB 18,29,550,74
APTOA6 6,299,50
AEPPAE 221,166,54
NTIS** AD-A125-539
CUTOEX 1,47,93
APTOA6 6,299,50
UCDS** 4/21/67
JIHTAB 23,259,41
        OXICITY DATA
ORL-WMN LDLO:108 MG/KG
UNR-MAN LDLO:477 MG/KG
ORL-RAT LD50:100 MG/KG
IHL-RAT LC50:203 MG/M3
SCU-RAT LD50:420 MG/KG
IVN-RAT LD50:87 MG/KG
ORL-MUS LD50:42 MG/KG
IHL-MUS LC50:454 GM/M3/4H
SCU-MUS LD50:300 MG/KG
SKN-RBT LD50:270 UL/KG
ORL-GPG LD50:260 MG/KG
 TOXICITY DATA
  TARGET ORGAN DATA
         REGET ORGAN DATA
SENSE ORGANS AND SPECIAL SENSES (OTHER OLFACTION EFFECTS)
SENSE ORGANS AND SPECIAL SENSES (OLFACTION TUMORS)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (EXCITEMENT)
                                                                                                                  CONTINUED ON NEXT PAGE
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HT501-320

CATALOG #:



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SHEET MATERIAL SAFETY DATA

HT501-320 FORMALIN SOLUTION, NEUTRAL BUFFERED CATALOG #: NAME: BEHAVIORAL (AGGRESSION)
LUNGS, THORAX OR RESPIRATION (BRONCHIOLAR CONSTRICTION, INCLUDING ASTHMA)
LUNGS, THORAX OR RESPIRATION (ACUTE PULMONARY EDEMA)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY OBSTRUCTION)
GASTROINTESTINAL (GASTRITIS)
GASTROINTESTINAL (ULCERATION OR BLEEDING FROM STOMACH)
GASTROINTESTINAL (NAUSEA OR VOMITING) LUNGS, THORAX OR RESPIRATION (RESPIRATORY OBSTRUCTION)

LUNGS, THORAX OR RESPIRATION (RESPIRATORY OBSTRUCTION)

GASTROINTESTINAL (GASTRITIS)

GASTROINTESTINAL (ULCERATION OR BLEEDING FROM STOMACH)

GASTROINTESTINAL (NAUSEA OR VOMITING)

BLOOD (OTHER CHANGES)

SKIN AND APPENDAGES (TUMORS)

PATERNAL EFFECTS (SPERMATOGENESIS)

PATERNAL EFFECTS (TESTES, EPIDLDYMIS, SPERM DUCT)

PATERNAL EFFECTS (PROSTATE, SEMINAL VESICLE, COWPER'S, ACCESSORY GLANDS

PATERNAL EFFECTS (OTHER EFFECTS ON MALE)

EFFECTS ON FERTILITY (MALE FERTILITY INDEX)

EFFECTS ON FERTILITY (POST-IMPLANTATION MORTALITY)

EFFECTS ON EMBRYO OR FETUS (FETAL DEATH)

SPECIFIC DEVELOPMENTAL ABNORMALITIES (CRANIOFACIAL)

SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)

SPECIFIC DEVELOPMENTAL ABNORMALITIES (MUSCULOSKELETAL SYSTEM)

SPECIFIC DEVELOPMENTAL ABNORMALITIES (TOTHER DEVELOPMENTAL ABNORMALITIES)

EFFECTS ON NEWBORN (BROWTH STATISTICS)

EFFECTS ON NEWBORN (BROWTH STATISTICS)

EFFECTS ON NEWBORN (BIOCHEMICAL AND METABOLIC)

EFFECTS ON NEWBORN (BIOCH SECTION 12. - - - - - - ECOLOGICAL INFORMATION - -DATA NOT YET AVAILABLE. SECTION 13. - - - - - - DISPOSAL CONSIDERATIONS - - -THIS COMBUSTIBLE MATERIAL MAY BE BURNED IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER. OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS. - - - TRANSPORT INFORMATION - - -SECTION 14. - -CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION. SECTION 15. - - - - - - REGULATORY INFORMATION - -EUROPEAN INFORMATION EC INDEX NO: 605-001-00-5 CONTINUED ON NEXT PAGE

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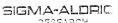








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CATALOG #:

HT501-320 FORMALIN SOLUTION, NEUTRAL BUFFERED

NAME: POSSIBLE RISK OF IRREVERSIBLE EFFECTS. MAT CAUSE SENSITIZATION BY SKIN CONTACT. IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.

S 36/37 WEAR SUITABLE PROTECTIVE CLOTHING AND GLOVES. IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE). USE ONLY IN WELL VENTILATED AREAS. REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
ACGIH TLV-SUSPECTED HUMAN CARCINOGEN
ACGIH TLV-CL 0.37 MG/M3 (0.3 PPM)
DTLVS\* TLV/BEI,96
ACGIH TLV-CL 0.37 MG/M3 (0.3 PPM)
DTLVS\* TLV/BEI,96
IARC CANCER REVIEW: ANIMAL SUFFICIENT EVIDENCE IMEMDT 29,345,82
IARC CANCER REVIEW: ANIMAL SUFFICIENT EVIDENCE IMEMDT 62,217,95
IARC CANCER REVIEW: HUMAN LIMITED EVIDENCE IMSUDL 7,211,87
IARC CANCER REVIEW: HUMAN LIMITED EVIDENCE IMSUDL 7,211,87
IARC CANCER REVIEW: GROUP 2A IMEMDT 62,217,95
IARC CANCER REVIEW: GROUP 2A IMEMDT 62,21 OEL-BELGIUM: TWA 1 PPM (1.2 MG/M3); STEL 2 PPM (2.5 MG/M3); CARCINOGEN JAN93
OEL-DENMARK:STEL 0.3 PPM (0.4 MG/M3);CARCINOGEN JAN93
OEL-FINLAND:STEL 1 PPM (1.3 MG/M3);SKIN JAN93
OEL-FRANCE:STEL 2 PPM (3 MG/M3) JAN93
OEL-GERMANY:TWA 0.5 PPM (0.6 MG/M3);CARCINOGEN JAN93
OEL-HUNGARY:STEL 0.6 MG/M3;CARCINOGEN JAN93
OEL-JAPAN:TWA 0.5 PPM (0.61 MG/M3);CARCINOGEN JAN93
OEL-JAPAN:TWA 0.5 PPM (0.61 MG/M3);STEL 2 PPM (3 MG/M3) JAN93
OEL-THE NETHERLANDS:TWA 1 PPM (1.5 MG/M3);STEL 2 PPM (3 MG/M3) JAN93
OEL-THE PHILIPPINES:TWA 5 PPM (6 MG/M3) JAN93
OEL-POLAND:TWA 2 MG/M3 JAN93
OEL-RUSSIA:TWA 0.5 PPM;STEL 0.5 MG/M3;SKIN JAN93
OEL-SWEDEN:TWA 0.5 PPM (0.6 MG/M3);STEL 1 PPM (1.2 MG/M3) JAN93

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HT501-320 72; TNF 10311; NOS 67; TNE 66921 213; TNF 33243; NOS 155; TNE 394660 87; TNF 11309; NOS 69; TNE 207013; TFE 104994 309; TNF 65738; NOS 193; TNE 1329322; TFE 441902
EPA GENETOX PROGRAM 1988, POSITIVE: CARCINOGENICITY-MOUSE/RAT
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER-RECIPROCAL
TRANSLOCATION
EPA GENETOX PROGRAM 1988, POSITIVE: N CRASSA-REVERSION; E COLI POLA
WITHOUT S9
EPA GENETOX PROGRAM 1988 WITHOUT S9
EPA GENETOX PROGRAM 1988, POSITIVE: D MELANOGASTER SEX-LINKED LETHAL
EPA GENETOX PROGRAM 1988, POSITIVE: S CEREVISIAE GENE CONVERSION; S
CEREVISIAE-REVERSION
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: IN VITRO UDS-HUMAN FIBROBLAST
EPA GENETOX PROGRAM 1988, INCONCLUSIVE: CHO GENE MUTATION
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
ON EPA IRIS DATABASE
ON EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JANUARY 1997
NIOSH CURRENT INTELLIGENCE BULLETIN 34, APRIL 1981
NIOSH ANALYTICAL METHOD, 1994: ALDEHYDES, SCREENING, 2539
NIOSH ANALYTICAL METHOD, 1994: FORMALDEHYDE BY ON DUST (TEXTILE OR
WOOD), 5700
NIOSH ANALYTICAL METHOD, 1994: FORMALDEHYDE BY GC, 2541; BY VIS, 3500
NTP 7TH ANNUAL REPORT ON CARCINOGENS 1992: ANTICIPATED TO BE
CARCINOGEN NTP 7TH ANNUAL REPORT ON CARCI CARCINOGEN OSHA ANALYTICAL METHOD #ID-102

S. INFORMATION
MAY CONTAIN UP TO:
4.0% FORMALDEHYDE 50-00-0
1.5% METHANOL 67-56-1
THESE PRODUCTS ARE SUBJECT TO SARA SECTION 313 REPORTING REQUIREMENTS. - - - OTHER INFORMATION- -

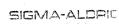
SECTION 16. - - - -THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. SIGMA SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT. SEE REVERSE SIDE OF INVOICE OR PACKING SLIP FOR ADDITIONAL TERMS AND CONDITIONS OF SALE.

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SHEET SAFETY MATERIAL

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CATALOG #: NAME:

HT501-320 FORMALIN SOLUTION, NEUTRAL BUFFERED

P.O. BOX 355 MILWAUKEE, WISCONSIN 53201, USA

MATERIAL WAS SHIPPED TO THIS ADDRESS:
UNIV OF WISC-WHITEWATER
MEG WARACZINSKI
PSYCHOLOGY
CENTRAL REC STORES
N FREMONT ST
WHITEWATER WI 53190

