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RdH Laborchemikalien GmbH & Co. KG
P.O.Box 10 02 62, D-30918 Seelze, Germany
Tel: +49-(0)5137-999 0 Fax +49-(0)5137-999 120

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1. - - - - - CHEMICAL IDENTIFICATION- - - - -

CATALOG #: 15307
NAME: CHLORAL HYDRATE, 99.5-101%

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -

CAS #: 302-17-0
MF: C2H3CL3O2
EC NO: 206-117-5

SYNONYMS

AQUACHLORAL * BI 3411 * CHLORALDURAT * DORMAL * 1,1-ETHANEDIOL, 2,2,2-
TRICHLORO- (9CI) * FELSULES * HYDRAL * HYDRATE DE CHLORAL *
KESSODRATE * LORINAL * NOCTEC * NYCOTON * NYCTON * PHALDRONE *
RECTULES * SK-CHLORAL HYDRATE * SOMNI SED * SOMNOS * SONTEC * TOSYL *
TRAWOTOX * TRICHLORACETALDEHYD-HYDRAT (GERMAN) *
TRICHLOROACETALDEHYDE HYDRATE * TRICHLOROACETALDEHYDE MONOHYDRATE * 1,
1,1-TRICHLORO-2,2-DIHYDROXYETHANE * 1,1,1-TRICHLORO-2,2-ETHANEDIOL *
2,2,2-TRICHLORO-1,1-ETHANEDIOL *

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

LABEL PRECAUTIONARY STATEMENTS

TOXIC
TOXIC IF SWALLOWED.
IRRITATING TO EYES AND SKIN.
TARGET ORGAN(S):
NERVES
LIVER
DO NOT BREATHE FUMES.
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF
WATER AND SEEK MEDICAL ADVICE.
WEAR SUITABLE PROTECTIVE CLOTHING.
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE
IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
AIR AND LIGHT SENSITIVE

SECTION 4. - - - - - FIRST-AID MEASURES- - - - -

IF SWALLOWED, WASH OUT MOUTH WITH WATER PROVIDED PERSON IS CONSCIOUS.
CALL A PHYSICIAN IMMEDIATELY.
IF INHALED, REMOVE TO FRESH AIR. IF NOT BREATHING GIVE ARTIFICIAL
RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.
IN CASE OF SKIN CONTACT, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND
SHOES. CALL A PHYSICIAN.
IN CASE OF CONTACT WITH EYES, FLUSH WITH COPIOUS AMOUNTS OF WATER
FOR AT LEAST 15 MINUTES. ASSURE ADEQUATE FLUSHING BY SEPARATING
THE EYELIDS WITH FINGERS. CALL A PHYSICIAN.

SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -

EXTINGUISHING MEDIA

WATER SPRAY.
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.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

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.
VENTILATE AREA AND WASH SPILL SITE AFTER MATERIAL PICKUP IS COMPLETE.
EVACUATE AREA.

SECTION 7. - - - - - HANDLING AND STORAGE- - - - -
REFER TO SECTION 8.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -
USE ONLY IN A CHEMICAL FUME HOOD.
SAFETY SHOWER AND EYE BATH.
WASH CONTAMINATED CLOTHING BEFORE REUSE.
WASH THOROUGHLY AFTER HANDLING.
DO NOT BREATHE DUST.
DO NOT GET IN EYES, ON SKIN, ON CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
NIOSH/MSHA-APPROVED RESPIRATOR.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
CHEMICAL SAFETY GOGGLES.
STORE IN A COOL DRY PLACE.
KEEP TIGHTLY CLOSED.
STORE IN THE DARK.

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

APPEARANCE AND ODOR
CRYSTALLINE
SOLID.

PHYSICAL PROPERTIES

BOILING POINT: 96 C
MELTING POINT: 58 C
VAPOR PRESSURE: 15 MMHG @ 25 C
SOLUBILITY:
WATER -Z26060

VERY SOLUBLE IN
FREELY SOLUBLE

ETHYL ETHER, AN
SPECIFIC GRAVITY: 1.424
VAPOR DENSITY: 5.1 G/L
PH: 3.5 - 4.4
SWISS POISON CLASS: 3

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

STABILITY
STABLE.

INCOMPATIBILITIES

SENSITIVE TO AIR
SENSITIVE TO LIGHT
ALKALIS, ALKALINE EARTHS, ALKALI CARBONATES, SOLUBLE BARBITURATES,
BORAX, TANNIN, IODIDES, OXIDIZING AGENTS, PERMANGANATES AND ALCOHOL.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE
HYDROGEN CHLORIDE GAS

HAZARDOUS POLYMERIZATION
WILL NOT OCCUR.

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

ACUTE EFFECTS

CAUSES SKIN IRRITATION.
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN.
CAUSES EYE IRRITATION.
MAY BE HARMFUL IF INHALED.
MATERIAL MAY BE IRRITATING TO MUCOUS MEMBRANES AND UPPER
RESPIRATORY TRACT.
TOXIC IF SWALLOWED.
SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING,
WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND
VOMITING.
EXPOSURE CAN CAUSE HEADACHE, DROWSINESS, CONFUSION, AMNESIA AND CARDIAC
ARRHYTHMIAS.

GASTROINTESTINAL DISTURBANCES
CNS DEPRESSION
EXPOSURE TO AND/OR CONSUMPTION OF ALCOHOL
MAY INCREASE TOXIC EFFECTS.
PROLONGED OR REPEATED EXPOSURE CAN LEAD TO HABITUATION OR ADDICTION.
SYMPTOMS MAY BE DELAYED.

CHRONIC EFFECTS

TARGET ORGAN(S):

NERVES
LIVER
KIDNEYS
HEART

THIS PRODUCT IS OR CONTAINS A COMPONENT THAT IS NOT CLASSIFIABLE AS
TO ITS CARCINOGENICITY BASED ON ITS IARC, ACGIH, NTP OR EPA
CLASSIFICATION.

LABORATORY EXPERIMENTS HAVE SHOWN MUTAGENIC EFFECTS.

RTECS #: FM8750000

CHLORAL HYDRATE

TOXICITY DATA

ORL-HMN LDLO:4 MG/KG	PHBTH* 3,132,1967
UNR-MAN LDLO:103 MG/KG	85DCAI 2,73,1970
ORL-RAT LD50:479 MG/KG	TXAPA9 18,185,1971
SKN-RAT LD50:3030 MG/KG	85JFAN A065,1984
IPR-RAT LD50:472 MG/KG	JAPMA8 41,100,1952
PAR-RAT LD50:710 MG/KG	NIIRDN 6,784,1982
UNR-RAT LD50:725 MG/KG	GISAAA 35(3),14,1970
REC-RAT LD50:710 MG/KG	NIIRDN -,1114,1990
ORL-MUS LD50:1100 MG/KG	JPETAB 106,444,1952
IPR-MUS LD50:580 MG/KG	ARZNAD 10,665,1960
IVN-MUS LD50:530 MG/KG	APFRAD 38,65,1980
UNR-MUS LD50:850 MG/KG	GISAAA 35(3),14,1970
UNR-RBT LD50:1400 MG/KG	GISAAA 35(3),14,1970
UNR-GPG LD50:940 MG/KG	GISAAA 35(3),14,1970

TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (MIOSIS)
SENSE ORGANS AND SPECIAL SENSES (OTHER EYE EFFECTS)
BEHAVIORAL (GENERAL ANESTHETIC)
BEHAVIORAL (SLEEP)
BEHAVIORAL (SOMNOLENCE)
BEHAVIORAL (HALLUCINATIONS, DISTORTED PERCEPTIONS)
BEHAVIORAL (CONVULSIONS OR EFFECT ON SEIZURE THRESHOLD)
BEHAVIORAL (EXCITEMENT)
BEHAVIORAL (ATAXIA)
BEHAVIORAL (COMA)
CARDIAC (ARRYTHMIAS)
CARDIAC (PULSE RATE INCREASED WITHOUT FALL IN BP)
VASCULAR (BP LOWERING NOT CHARACTERIZED IN AUTONOMIC SECTION)
LUNGS, THORAX OR RESPIRATION (CYANOSIS)
LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)
LUNGS, THORAX OR RESPIRATION (OTHER CHANGES)
GASTROINTESTINAL (NAUSEA OR VOMITING)
LIVER (TUMORS)
SKIN AND APPENDAGES (AFTER SYSTEMIC EXPOSURE: DERMATITIS, OTHER)
SKIN AND APPENDAGES (TUMORS)
TUMORIGENIC (CARCINOGENIC BY RTECS CRITERIA)
TUMORIGENIC (EQUIVOCAL TUMORIGENIC AGENT BY RTECS CRITERIA)
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 THE DRUG ENFORCEMENT ADMINISTRATION CONCERNING THE DISPOSAL
OF CONTROLLED SUBSTANCES.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -

CONTACT SIGMA CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

EC INDEX NO: 605-014-00-6

TOXIC

R 25

TOXIC IF SWALLOWED.

R 36/38

IRRITATING TO EYES AND SKIN.

S 23

DO NOT BREATHE FUMES.

S 45

IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE

IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK