Valid 11/1999 - 01/2000

FOAM AND WATER SPRAY ARE EFFECTIVE BUT MAY CAUSE FROTHING.

SPECIAL FIREFIGHTING PROCEDURES

WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS

FLAMMABLE SOLID.

THIS MATERIAL, LIKE MOST MATERIALS IN POWDER FORM, IS CAPABLE OF CREATING A DUST EXPLOSION.

SECTION 6. - - - - - - - - ACCIDENTAL RELEASE MEASURES- - - - - - - - -

EVACUATE AREA.

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.

SECTION 7. - - - - - - - - - - HANDLING AND STORAGE- - - - - - - - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - - -

STORE IN A COOL DRY PLACE.

KEEP TIGHTLY CLOSED.

KEEP AWAY FROM HEAT, SPARKS, AND OPEN FLAME.

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.

DO NOT BREATHE DUST.

AVOID CONTACT WITH FUMES.

DO NOT GET IN EYES, ON SKIN, ON CLOTHING.

AVOID PROLONGED OR REPEATED EXPOSURE.

WASH THOROUGHLY AFTER HANDLING.

DISCARD CONTAMINATED CLOTHING AND SHOES.

TOXIC.

IRRITANT.

SENSITIZER.

HYGROSCOPIC

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

PHYSICAL PROPERTIES

BOILING POINT:	218 C
MELTING POINT:	77 C
FLASHPOINT	176 F
	80 C

EXPLOSION LIMITS IN AIR:

UPPER	5.9 %
LOWER	0.9 %

VAPOR PRESSURE:	1 MMHG
VAPOR DENSITY:	4.4 G/L

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

INCOMPATIBILITIES

OXIDIZING AGENTS

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS

CARBON MONOXIDE, CARBON DIOXIDE

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

ACUTE EFFECTS

MATERIAL IS IRRITATING TO MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

HARMFUL IF SWALLOWED, INHALED, OR ABSORBED THROUGH SKIN.

CAUSES EYE AND SKIN IRRITATION.

SYMPTOMS OF EXPOSURE MAY INCLUDE BURNING SENSATION, COUGHING, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA AND VOMITING.

ABSORPTION INTO THE BODY LEADS TO THE FORMATION OF METHEMOGLOBIN WHICH IN SUFFICIENT CONCENTRATION CAUSES CYANOSIS. ONSET MAY BE DELAYED 2 TO 4 HOURS OR LONGER.

NAPHTHALENE IS RETINOTOXIC AND SYSTEMIC ABSORPTION OF ITS VAPORS ABOVE 15PPM, MAY RESULT IN CATARACTS, OPTICAL NEURITIS, INJURIES TO THE CORNEA AND MARKED EYE IRRITATION. INGESTION OF LARGE QUANTITIES HAVE BEEN REPORTED TO CAUSE SEVERE HEMOLYTIC ANEMIA AND HEMOGLOBINURIA. MAY CAUSE ALLERGIC SKIN REACTION.

CHRONIC EFFECTS

CARCINOGEN.

TARGET ORGAN(S):

EYES

BLOOD

KIDNEYS

LUNGS

RTECS #: QJ0525000

NAPHTHALENE

IRRITATION DATA

SKN-RBT 495 MG OPEN MLD	UCDS** 1/11/1968
EYE-RBT 100 MG MLD	BIOFX* 16-4/1970

TOXICITY DATA

ORL-CHD LDLO:100 MG/KG	28ZRAQ -,228,1960
UNR-HMN LDLO:29 MG/KG	YKYUA6 31,1499,1980
UNR-MAN LDLO:74 MG/KG	85DCAI 2,73,1970
ORL-RAT LD50:490 MG/KG	85GMAT -,89,1982
IHL-RAT LC50:>340 MG/M3/1H	BIOFX* 16-4/1970
SKN-RAT LD50:>2500 MG/KG	TXAPA9 14,515,1969
ORL-MUS LD50:533 MG/KG	FAATDF 4,406,1984
IPR-MUS LD50:150 MG/KG	NTIS** AD691-490
SCU-MUS LD50:969 MG/KG	TOIZAG 20,772,1973
IVN-MUS LD50:100 MG/KG	CSLNX* NX#00203
SKN-RBT LD50:>20 GM/KG	NTIS** AD-A062-138
ORL-GPG LD50:1200 MG/KG	GISAAA 47(11),78,1982

TARGET ORGAN DATA

SENSE ORGANS AND SPECIAL SENSES (PTOSIS)

BEHAVIORAL (SOMNOLENCE)

BEHAVIORAL (TREMOR)

BEHAVIORAL (CHANGE IN MOTOR ACTIVITY)

BEHAVIORAL (ATAXIA)

LUNGS, THORAX OR RESPIRATION (RESPIRATORY DEPRESSION)

LUNGS, THORAX OR RESPIRATION (TUMORS)

TUMORIGENIC (NEOPLASTIC 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 - - - - - - - - -

DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN IN A CHEMICAL INCINERATOR EQUIPPED WITH AN AFTERBURNER AND SCRUBBER. 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

HIGHLY FLAMMABLE

TOXIC

S 16
KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.
S 45
IN CASE OF ACCIDENT OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY (SHOW THE LABEL WHERE POSSIBLE).
S 26
IN CASE OF CONTACT WITH EYES, RINSE IMMEDIATELY WITH PLENTY OF WATER AND SEEK MEDICAL ADVICE.
S 36/37/39
WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
ACGIH TLV-NOT CLASSIFIABLE AS A HUMAN CARCINOGEN DTLVS* TLV/BEI,1997
ACGIH TLV-STEL 79 MG/M3 (15 PPM) DTLVS* TLV/BEI,1997
ACGIH TLV-TWA 52 MG/M3 (10 PPM) DTLVS* TLV/BEI,1997
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,1989
MSHA STANDARD-AIR:TWA 10 PPM (50 MG/M3)
DTLVS* 3,177,1971
OSHA PEL (GEN INDU):8H TWA 10 PPM (50 MG/M3)
CFRGBR 29,1910.1000,1994
OSHA PEL (CONSTRUC):8H TWA 10 PPM (50 MG/M3)
CFRGBR 29,1926.55,1994
OSHA PEL (SHIPYARD):8H TWA 10 PPM (50 MG/M3)
CFRGBR 29,1915.1000,1993
OSHA PEL (FED CONT):8H TWA 10 PPM (50 MG/M3)
CFRGBR 41,50-204.50,1994
OEL-ARAB REPUBLIC OF EGYPT:TWA 10 PPM (50 MG/M3) JAN 1993
OEL-AUSTRIA: MAK 10 PPM (50 MG/M3), JAN1999
OEL-AUSTRALIA:TWA 10 PPM (50 MG/M3);STEL 15 PPM (75 MG/M3) JAN 1993
OEL-BELGIUM:TWA 10 PPM (52 MG/M3);STEL 15 PPM (79 MG/M3) JAN 1993
OEL-DENMARK: TWA 10 PPM (50 MG/M3), JAN1999
OEL-FINLAND:TWA 10 PPM (50 MG/M3);STEL 20 PPM (100 MG/M3) JAN 1993
OEL-GERMANY:TWA 10 PPM (50 MG/M3) JAN 1993
OEL-HUNGARY:TWA 40 MG/M3;STEL 80 MG/M3;SKIN JAN 1993
OEL-THE NETHERLANDS:TWA 10 PPM (50 MG/M3) JAN 1993
OEL-POLAND: MAC(TWA) 20 MG/M3, MAC(STEL) 75 MG/M3, JAN1999
OEL-THE PHILIPPINES:TWA 10 PPM (50 MG/M3) JAN 1993
OEL-RUSSIA:STEL 20 MG/M3 JAN 1993
OEL-SWITZERLAND:TWA 10 PPM (50 MG/M3) JAN 1993
OEL-UNITED KINGDOM:TWA 10 PPM (50 MG/M3);STEL 15 PPM (75 MG/M3) JAN 1993
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO NAPHTHALENE-AIR:10H TWA 10 PPM;STEL 15 PPM
NIOSH* DHHS #92-100,1992
NOHS 1974: HZD 49600; NIS 71; TNF 4341; NOS 68; TNE 44297
NOES 1983: HZD 49600; NIS 83; TNF 7209; NOS 87; TNE 112696; TFE 5220
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-MOUSE EMBRYO
EPA GENETOX PROGRAM 1988, NEGATIVE: CELL TRANSFORM.-RLV F344 RAT EMBRYO
EPA GENETOX PROGRAM 1988, NEGATIVE: HISTIDINE REVERSION-AMES TEST
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, JUNE 1999
NIOSH ANALYTICAL METHOD, 1994: HYDROCARBONS, AROMATIC, 1501
NIOSH ANALYTICAL METHOD, 1994: POLYNUCLEAR AROMATIC HYDROCARBONS BY HPLC, 5506; BY GC, 5515
NTP CARCINOGENESIS STUDIES (INHALATION);SOME EVIDENCE:MOUSE
NTPTR* NTP-TR-410,1992
NTP CARCINOGENESIS STUDIES; ON TEST (TWO YEAR STUDIES), MAY 1999
OSHA ANALYTICAL METHOD #35

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.