

MATERIAL SAFETY DATA SHEET

PRODUCT: DEET

Section 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME..... DEET
 CHEMICAL NAME..... N,N'-DIETHYL-m-TOLUAMIDE.
 CHEMICAL FAMILY..... ALKYL AMIDE.
 C.A.S. #..... 134-62-3.
 MOLECULAR WEIGHT..... 191.3.
 CHEMICAL FORMULA..... C₁₂H₁₇NO.

Section 02: COMPOSITION/INFORMATION INGREDIENTS

Hazardous Ingredients	%	Exposure Limit	C.A.S.#	LD/50, Route,Species	LC/50 Route,Species
N,N-DIETHYLTOLUAMIDE	100	N/A	134-62-3	N/A	N/A

Section 03: HAZARDS IDENTIFICATION

ROUTE OF ENTRY:
 SKIN CONTACT..... MAY CAUSE IRRITATION.
 SKIN ABSORPTION..... N/AV.
 EYE CONTACT..... MAY CAUSE EYE IRRITATION.
 INHALATION..... INHALATION OF VAPORS OR MISTS MAY CAUSE IRRITATION OF RESPIRATORY PASSAGES.
 INHALATION, CHRONIC..... N/AV.
 INGESTION..... MAY BE HARMFUL IF SWALLOWED IN LARGE QUANTITIES.
 EFFECTS OF ACUTE EXPOSURE..... SEE ABOVE.
 EFFECTS OF CHRONIC EXPOSURE..... NOT ESTABLISHED.

Section 04: FIRST AID MEASURES

FIRST AID MEASURES:..... EYES: IMMEDIATELY FLUSH WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES, OCCASIONALLY LIFTING THE UPPER AND LOWER EYELIDS. CALL A PHYSICIAN AT ONCE. IN CASE OF SKIN CONTACT, IMMEDIATELY WASH WITH SOAP AND PLENTY OF WATER. IF SWALLOWED, IF VICTIM IS CONSCIOUS AND NOT HAVING CONVULSIONS, DILUTE BY GIVING TWO GLASSES OF WATER. INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. IF INHALED, REMOVE VICTIM TO FRESH AIR. AID IN BREATHING IF NECESSARY. IN ALL CASES OBTAIN MEDICAL ATTENTION IMMEDIATELY.

Section 05: FIRE FIGHTING MEASURES

FLAMMABILITY..... N/AV.
 IF YES, UNDER WHICH CONDITIONS?
 EXTINGUISHING MEDIA..... WATER SPRAY. FOAM. DRY CHEMICAL.
 SPECIAL PROCEDURES..... FIREFIGHTERS SHOULD WEAR FULL PROTECTIVE GEAR INCLUDING SELF-CONTAINED BREATHING APPARATUS WITH FULL FACESHIELD OPERATED IN POSITIVE PRESSURE MODE.

FLASH POINT (C), METHOD..... 155 C.
 AUTO IGNITION TEMPERATURE..... N/AV.
 T.D.G. FLAM. CLASS..... NOT REGULATED.
 UPPER FLAMMABLE LIMIT (% BY VOL.)... NOT ESTABLISHED.
 LOWER FLAMMABLE LIMIT (% BY VOL.)... NOT ESTABLISHED.
 HAZARDOUS COMBUSTION PRODUCTS... OXIDES OF CARBON. OXIDES OF NITROGEN.

EXPLOSION DATA
 SENSITIVITY TO STATIC DISCHARGE..... N/AV.
 SENSITIVITY TO IMPACT..... N/AV.
 RATE OF BURNING..... N/AV.
 EXPLOSIVE POWER..... N/AV.

PRODUCT: DEET**Section 06: ACCIDENTAL RELEASE MEASURES**

LEAK/SPILL..... ABSORB RESIDUAL MATERIAL WITH SAND, OR OTHER ABSORBENT MATERIAL. PLACE IN AN APPROPRIATE CONTAINER AND SEAL. PREVENT RUNOFF INTO DRAINS, SEWERS, AND OTHER WATERWAYS.

Section 07: HANDLING AND STORAGE

HANDLING PROCEDURES AND AVOID CONTACT WITH EYES, SKIN OR CLOTHING. USE ADEQUATE VENTILATION.
EQUIPMENT WASH THOROUGHLY AFTER HANDLING.
STORAGE NEEDS..... STORE AT ROOM TEMPERATURE. STORE IN A COOL, DRY, WELL-VENTILATED PLACE. KEEP CONTAINER CLOSED WHEN NOT IN USE.
SPECIAL SHIPPING INSTRUCTIONS..... PROTECT AGAINST PHYSICAL DAMAGE.

Section 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

GLOVES/ TYPE..... IMPERVIOUS GLOVES.
RESPIRATORY/TYPE..... USE OF AN APPROVED MIST-TYPE RESPIRATOR IS RECOMMENDED IF PRODUCT IS USED IN A CONFINED AREA OR HEATED ABOVE AMBIENT TEMPERATURE.
EYE/TYPE SAFETY GLASSES WITH SIDE-SHIELDS.
FOOTWEAR/TYPE..... CHEMICALLY RESISTANT SAFETY SHOES.
CLOTHING/TYPE..... PROTECTIVE CLOTHING.
OTHER/TYPE..... EYE BATH AND SAFETY SHOWER.
ENGINEERING CONTROLS..... PROVIDE GENERAL OR LOCAL EXHAUST VENTILATION AS NECESSARY TO KEEP AIRBORNE CONCENTRATION BELOW EXPOSURE LIMITS. ADEQUATE VENTILATION.

Section 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE..... CLEAR OILY LIQUID.
ODOUR..... MILD CHARACTERISTIC ODOUR.
ODOUR THRESHOLD..... N/AV.
SPECIFIC GRAVITY (WATER=1)..... 0.996. @ 25/25 C.
VAPOR PRESSURE (mmHg)..... 0.0017 mm Hg. @ 25 C.
VAPOUR DENSITY (AIR=1)..... 6.7.
EVAPORATION RATE..... < 1 (BUTYL ACETATE = 1).
BOILING POINT..... 291.7 C at 760 mm Hg.
pH..... N/AV.
FREEZING POINT..... -43 C.
SOLUBILITY IN WATER (% W/W)..... 9.04 mg/ml.
COEFFICIENT OF WATER/OIL DIST..... N/AV.

Section 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY:
YES..... STABLE.
NO, WHICH CONDITIONS?
COMPATABILITY WITH OTHER SUBSTANCES:
YES
NO, WHICH ONES?..... OXIDIZING AGENTS.
HAZARDOUS POLYMERIZATION..... WILL NOT OCCUR.
REACTIVITY CONDITIONS?..... NONE KNOWN.
HAZARDOUS PRODUCTS OF DECOMPOSITION..... OXIDES OF CARBON (CO,CO2). OXIDES OF NITROGEN.

Section 11: TOXICOLOGICAL INFORMATION

IRRITANCY OF MATERIAL..... MINIMALLY IRRITATING. SEE SECTION III.
SENSITIZING CAPABILITY OF MATERIAL..... PRE-EXISTING SKIN CONDITIONS SUCH AS ECZEMA MAY BE AGGRAVATED.
CARCINOGENICITY OF MATERIAL..... MICE AND RABBITS EXPOSED DERMALLY TO 0.02 ML OF 10, 50 AND 100% CONCENTRATIONS OF DEET TWICE A WEEK FOR 160 WEEKS HAD NO SIGNIFICANT DIFFERENCES IN THE NUMBER OF TUMORS COMPARED TO CONTROLS.
TERATOGENICITY..... NO SIGNIFICANT EFFECTS WERE OBSERVED IN THE FETUSES OF FEMALE AND MALE RATS OR RABBITS.
MUTAGENICITY..... WAS NOT MUTAGENIC IN SALMONELLA TYPHIMURIUM STRAINS TA100, TA1535, TA97 OR TA98 WITH OR WITHOUT METABOLIC ACTIVATION WHEN TESTED IN A PREINCUBATION ASSAY.
REPRODUCTIVE EFFECTS..... NO SIGNIFICANT EFFECTS WERE OBSERVED IN THE FETUSES OF FEMALE OR MALE RATS OR RABBITS.
SYNERGISTIC MATERIALS..... N/AV.
LD 50 OF MATERIAL, SPECIES & ROUTE.. 1950 mg/kg (oral, rat). 1584 mg/kg (oral, rabbit). 5000 mg/kg (dermal, rat). 3180 mg/kg (dermal, rabbit).

PRODUCT: DEET**Section 11: TOXICOLOGICAL INFORMATION**

LC 50 OF MATERIAL, SPECIES & ROUTE.. 760 ppm (rat, inhalation).
EXPOSURE LIMIT OF MATERIAL..... N/AV.

Section 12: ECOLOGICAL CONSIDERATIONS

ECOTOXICOLOGICAL INFORMATION..... NOT EXPECTED TO BE TOXIC TO AQUATIC LIFE. NOT EXPECTED TO
BIOACCUMULATE. EC50: 56-100ppm (daphnia, 48h). LC50: 71.25 ppm (rainbow trout,
96h). LC50: 110 mg/l (fathead minnow, 96h). LC50: 1375 mg/kg (northern bobwhite quail).
BIODEGRADABILITY..... MODELING SUGGESTS RAPID DEGRADATION IN THE ATMOSPHERE;
BIODEGRADATION DATA SUGGESTS MODERATE RATE OF BIODEGRADATION.

Section 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL..... IN ACCORDANCE WITH MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS.

Section 14: TRANSPORT INFORMATION

T.D.G. CLASSIFICATION..... NOT REGULATED.

Section 15: REGULATORY INFORMATION

DSL STATUS:..... ON DSL.
WHMIS CLASSIFICATION..... CLASS D, DIVISION 2, SUB-DIVISION B.

Section 16: OTHER INFORMATION

DISCLAIMER:..... The information presented herein has been compiled from sources considered to be
dependable and is accurate to the best of our knowledge; however, company
makes no warranty with respect thereto and expressly disclaims all liability for reliance
thereon. Such data are offered solely for your consideration, investigation and verification.
ABBREVIATIONS:..... N/AV: not available; N/A: not applicable; N/E: not established; IARC: international agency
for research on cancer; ACGIH: american conference of governmental industrial hygienists;
TLV: threshold limit values; NIOSH: national institute of occupational safety and health;
TDG: transportation of dangerous goods act; OSHA: occupational safety and health
administration; NTP: national toxicology program.