



The Chemical Company
19 Narragansett Avenue
Jamestown, RI 02835
Phone: (401) 423- 3100

Material Safety Data Sheet

Section 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME Chemflexx DOA
SYNONYMS DI-2-ETHYLHEXYL ADIPATE, DI-OCTYL ADIPATE, BIS (2-ETHYLHEXYL) ADIPATE, DOA, DEHA
PRODUCT CODES 0101352
MANUFACTURER The Chemical Company
ADDRESS 19 Narragansett Avenue
Jamestown, RI 02835
EMERGENCY PHONE 401-423-3100
OTHER CALLS 401-423-3100
CHEMICAL NAME DI-2-ETHYLHEXYL ADIPATE, BIS (2-ETHYLHEXYL) ADIPATE
CHEMICAL FAMILY ORGANIC ESTER
CHEMICAL FORMULA $C_{22}H_{42}O_4$
CAS NUMBER 103-23-1
PRODUCT USE PLASTICIZER
PREPARED BY CHEMICALS BUSINESS GROUP

Section 2: COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT:

CAS NUMBER:	% WT	% VOL	SARA 313 REPORTABLE
103-23-1	>99		NM
	PPM	MG/M3	

OSHA PEL-TWA NM
OSHA PEL-STEL NM
OSHA PEL-CEILING NM

ACGIH TLV-TWA NM
ACGIH TLV-STEL NM
ACGIH TLV CEILING NM

Section 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

ROUTES OF ENTRY

EYES

LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING BY TRAINED PERSONNEL.

SKIN

LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING BY TRAINED PERSONNEL.

INGESTION

EXPECTED TO BE A LOW INGESTION HAZARD

INHALATION

LOW HAZARD FOR USUAL INDUSTRIAL OR COMMERCIAL HANDLING BY TRAINED PERSONNEL.

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ACUTE HEALTH HAZARDS NM
CHRONIC HEALTH HAZARDS NM
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE NM

CARCINOGENICITY

OSHA NM
ACGIH NM
NTP NM
IARC NM
OTHER NM

Section 4: FIRST AID MEASURES

EYES ANY MATERIAL THAT CONTACTS THE EYE SHOULD BE WASHED OUT IMMEDIATELY WITH WATER. IF EASY TO DO REMOVE CONTACT LENSES. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

SKIN WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

INGESTION SEEK MEDICAL ADVICE

INHALATION IF SYMPTOMATIC MOVE VICTIM TO FRESH AIR. GET MEDICAL ATTENTION IF SYMPTOMS PERSIST.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABLE LIMITS IN AIR UPPER: NM
(% BY VOLUME) LOWER 468oF / 242oC 0.38% VOLUME

FLASH POINT:

°F 402
°C 206

METHOD USED COC

AUTOIGNITION TEMPERATURE D2155

°F 710

°C 377

NFPA HAZARD CLASSIFICATION:

HEALTH: 0 FLAMMABILITY: 1 REACTIVITY: 0

OTHER:

HMIS HAZARD CLASSIFICATION:

HEALTH: 1 FLAMMABILITY: 1 REACTIVITY: 0

PROTECTION:

EXTINGUISHING METHOD WATER SPRAY, DRY CHEMICAL, CO2, FOAM

SPECIAL FIREFIGHTING PROCEDURES WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING. WATER OR FOAM MAY CAUSE FROTHING WHICH CAN BE VIOLENT AND POSSIBLY ENDANGER THE LIFE OF THE FIRE FIGHTER.

UNUSAL FIRE AND EXPLOSION HAZARDS NONE

HAZARDOUS DECOMPOSITION PRODUCTS CARBON MONOXIDE, CARBON DIOXIDE

Section 6: ACCIDENTAL RELEASE MEASURES

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ACCIDENTAL RELEASE MEASURES ABSORB SPILL WITH VERMICULITE OR OTHER INERT MATERIAL, THEN PLACE IN A CONTAINER FOR CHEMICAL WASTE.
FOR LARGER SPILLS FLUSH THE SPILL AREA WITH WATER SPRAY.
PREVENT RUNOFF FROM ENTERING DRAINS, SEWERS, OR STREAMS.

Section 7: HANDLING AND STORAGE

HANDLING AND STORAGE NO SPECIAL PRECAUTIONARY MEASURE SHOULD BE NEEDED UNDER ANTICIPATED CONDITIONS OF USE. KEEP CONTAINER CLOSED.

OTHER PRECAUTIONS KEEP FROM CONTACT WITH OXIDIZING MATERIALS

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

VENTILATION GOOD GENERAL VENTILATION SHOULD BE USED. SUPPLEMENTARY LOCAL EXHAUST VENTILATION, CLOSED SYSTEMS OR RESPIRATORY PROTECTION MAY BE NEEDED IN SPECIAL CIRCUMSTANCES SUCH AS POORLY VENTILATED SPACES, EVAPORATING FROM LARGE SURFACES, SPRAYING, HEATING, ETC.

RESPIRATORY PROTECTION NONE SHOULD BE NEEDED

EYE PROTECTION IT IS GOOD INDUSTRIAL PRACTICE TO MINIMIZE EYE CONTACT

SKIN PROTECTION IT IS GOOD INDUSTRIAL PRACTICE TO MINIMIZE SKIN CONTACT

OTHER PROTECTIVE CLOTHING OR EQUIPMENT NM

WORK HYGIENIC GUIDELINES NA

EXPOSURE GUIDELINES NA

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	COLORLESS	
ODOR	SLIGHT	
PHYSICAL STATE	LIQUID	
pH AS SUPPLIED	NM	
pH (OTHER)	NM	
BOILING POINT	782°F	417°C
MELTING POINT	<134°F	<70°C
FREEZING POINT	-76°F	
VAPOR PRESSURE (MM HG)	0.00000055 MBAR @ 20°C	
VAPOR DENSITY (AIR=1)	12.8	
SPECIFIC GRAVITY (H2O=1)	0.927 @ 20°C	
EVAPORATION RATE	NEGLIGIBLE	
BASIS	(=1)	
SOLUBILITY IN WATER	NEGLIGIBLE	
PERCENT SOLIDS BY WEIGHT	NA	
PERCENT VOLATILE	MN	

VOLATILE ORGANIC COMPOUNDS



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MOLECULAR WEIGHT

VISCOSITY 12.96 Cp 68°F

Section 10: STABILITY AND REACTIVITY

STABLE X **UNSTABLE**
STABILITY

CONDITIONS TO AVOID (STABILITY) TEMPERATURES ABOVE THE BOILING
INCOMPATIBILITY (MATERIALS TO AVOID) AVOID CONTACT WITH STRONG OXIDIZERS

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS NA

HAZARDOUS POLYMERIZATION WILL NOT OCCUR

CONDITIONS TO AVOID (POLYMERIZATION) NA

Section 11: TOXICOLOGICAL INFORMATION

**TOXICOLOGICAL
INFORMATION**

GENERAL: DEHA WAS ADMINISTERED TO RATS AND MICE IN A LIFETIME BIOASSAY SPONSORED BY THE US NATIONAL TOXICOLOGY PROGRAM (NTP). EXTREMELY HIGH FEED CONCENTRATIONS (12,000 AND 25,000 PPM) CAUSED AN INCREASE INCIDENCE OF LIVER TUMORS IN FEMALE MICE ONLY. PREVIOUS LONG-TERM STUDIES IN RATS AND DOGS DID NOT DETECT TUMORS. FURTHER STUDIES HAVE SHOWN THAT THE LIVER TUMORS IN MICE PROBABLY AROSE FROM DEHA'S EFFECT ON LIVER BIOCHEMISTRY. THESE CHANGES MAY NOT OCCUR IN HUMANS. THEREFORE IN THE ABSENCE OF THESE LIVER EFFECTS AND SINCE DEHA IS NOT GENOTOXIC, DEHA PROBABLY REPRESENTS A NEGLIGIBLE CARCINOGENIC RISK TO HUMANS AT EXPOSURE LEVELS TYPICAL OF OCCUPATIONAL OR CONSUMER USE.

ACUTE TOXICITY DATA:

ORAL LD-50 (RAT): 9.1 G/KG

INHALATION LC-50: NM

DERMAL LD-50 (RABBIT): VERY SLIGHT

SKIN SENSITIZATION (GUINEA PIG): NONE

EYE IRRITATION (RABBIT): VERY SLIGHT

SUBCHRONIC TOXICITY DATA

ORAL STUDY (1 MONTH RAT): LOEL = 2.5% IN DIET (REDUCED BODY WEIGHT GAIN)

ORAL STUDY (2 MONTHS DOG): NOEL 2000 MG/KG/DAY (REDUCED FEED INTAKE) (ONLY DOSE TESTED)

CHRONIC TOXICITY

ORAL STUDY (2 YEARS, RAT) LOEL = 2.5% IN DIET (REDUCED BODY WEIGHT GAIN) (REDUCED FEED INTAKE): NOEL = 0.5% IN DIET

ORAL STUDY (1 YEAR DOG): NOEL = 75MG/KG/DAY (HIGHEST DOSE TESTED)

DEVELOPMENTAL TOXICITY DATA:

ORAL STUDY (RAT):NOEL FOR TERATOGENICITY = 1080 MG/KG/DAY (HIGHEST DOSE TESTED); LOEL FOR MATERNAL TOXICITY = 1080 MG/KG/DAY; NOEL FOR MATERNAL TOXICITY = 170 MG/KG/DAY

MUTAGENICITY/GENOTOXICITY DATA:

CELL TRANSFORMATION ASSAY: NEGATIVE (+/- ACTIVATION)

MOUSE LYMPHOMA ASSAY: NEGATIVE

MOUSE MICRONUCLEAS ASSAY:NEGATIVE

SALMONELLA TYPHIMURTUM ASSAY (AMES TEST): NEGATIVE (+/- ACTIVATION)



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UNSCHEDULED DNA SYNTHESIS (UDS) ASSAY: NEGATIVE

Section 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION

INTRODUCTION: THIS ENVIRONMENTAL EFFECTS SUMMARY IS WRITTEN TO ASSIST IN ADDRESSING EMERGENCIES CREATED BY AN ACCIDENTAL SPILL WHICH MIGHT OCCUR DURING THE SHIPMENT OF THIS MATERIAL, AND, IN GENERAL, IS NOT MEANT TO ADDRESS DISCHARGES TO SANITARY SEWERS OR PUBLICLY OWNED TREATMENT WORKS.

SUMMARY: DATA FOR THIS MATERIAL HAVE BEEN USED TO ESTIMATE ITS ENVIRONMENTAL IMPACT. IT HAS THE FOLLOWING PROPERTIES: A HIGH POTENTIAL TO AFFECT SOME AQUATIC ORGANISMS, A HIGH POTENTIAL TO BIODEGRADE (LOW PERSISTENCE) WITH UNACCLIMATED MICROORGANISMS FROM ACTIVATED SLUDGE, A LOW POTENTIAL TO PERSIST IN THE ENVIRONMENT, A LOW POTENTIAL TO BIOCONCENTRATE. AFTER DILUTION WITH A LARGE AMOUNT OF WATER, FOLLOWED BY SECONDARY WASTE TREATMENT, THIS MATERIAL IS NOT EXPECTED TO CAUSE ADVERSE ENVIRONMENTAL EFFECTS.

OXYGEN DEMAND DATA: BOD-5 AND BOD-20 WERE NOT DETERMINED BECAUSE THE AQUEOUS SOLUBILITY OF THE TEST ARTICLE WAS BELOW THAT WHICH IS REQUIRED FOR THESE TESTS.

THOD: 2.63 G OXYGEN/G

ACUTE AQUATIC EFFECTS DATA:

96-H LC-50 (BLUEGILL SUNFISH): NOEC >0.78 MG/L (LIMIT OF SOLUBILITY IN FRESH WATER)

96-H LC-50 (FATHEAD MINNOW): NOEC >0.78 MG/L (LIMIT OF SOLUBILITY IN FRESH WATER)

96-H LC-50 (RAINBOW TROUT): NOEC >0.78 MG/L (LIMIT OF SOLUBILITY IN FRESH WATER)

48-H EC-50 (DAPHNID): 0.66 MG/L

ACUTE ALGA EFFECTS:

96-H LC-50 (SELENASTRUM CAPRICOMUTUM): NOEC >0.78 MG/L (LIMIT OF SOLUBILITY IN FRESH WATER)

CHRONIC AQUATIC EFFECTS DATA: 21-D DAPHNID SURVIVAL AND REPRODUCTION TEST:

MATC: 0.024-0.052 MG/L

BIOCONCENTRATION FACTOR: BLUEGILL SUNFISH: 27

BIODEGRADATION: 67-75% OF THIS MATERIAL WAS REMOVED AS MEASURED BY



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BIOLOGICAL OXYGEN DEMAND (BOD) OVER 28 DAYS

Section 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD DISCHARGE, TREATMENT, OR DISPOSAL MAY BE SUBJECT TO NATIONAL, STATE, OR LOCAL LAWS. INCINERATE.

RCRA HAZARD CLASS NM

Section 14: TRANSPORT INFORMATION

US DEPARTMENT OF TRANSPORTATION

PROPER SHIPPING NAME:

HAZARD CLASS NOT REGULATED

ID NUMBER NM

PACKING GROUP NM

LABEL STATEMENT NM

WATER TRANSPORTATION IMDG

PROPER SHIPPING NAME

HAZARD CLASS NOT REGULATED

ID NUMBER NM

PACKING GROUP NM

LABEL STATEMENT

AIR TRANSPORTATION ICAO

PROPER SHIPPING NAME

HAZARD CLASS NOT REGULATED

ID NUMBER NM

PACKING GROUP NM

LABEL STATEMENT NM

OTHER AGENCIES

Section 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT)

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION AND LIABILITY ACT)

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES NOT APPLICABLE

313 REPORTABLE INGREDIENTS NONE

STATE REGULATIONS CA PROP 65 – CANCER – NONE KNOWN
CA PROP 65 – REPRODUCTIVE EFFECTS – NONE KNOWN

CEPA / DSL - LISTED

INTERNATIONAL REGULATIONS EINECS – LISTED

AICS – LISTED

JHNEC - LISTED



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