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S A F E T Y D A T A S H E E T

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	00575
NAME:	<i>N,N</i> -Dimethylformamide
SYNONYMS:	<i>N</i> -Formyldimethylamine
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA) 352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
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SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)

FLAMMABLE LIQUIDS (CATEGORY 3), H226
ACUTE TOXICITY, INHALATION (CATEGORY 4), H332
ACUTE TOXICITY, DERMAL (CATEGORY 4), H312
EYE IRRITATION (CATEGORY 2A), H319
REPRODUCTIVE TOXICITY (CATEGORY 1B), H360

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE
SECTION 16.

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS
PICTOGRAM**



SIGNAL WORD DANGER

HAZARD STATEMENT(S)

H226 FLAMMABLE LIQUID AND VAPOUR.
H312 + H332 HARMFUL IN CONTACT WITH SKIN OR IF INHALED
H319 CAUSES SERIOUS EYE IRRITATION.
H360 MAY DAMAGE FERTILITY OR THE UNBORN CHILD.

PRECAUTIONARY STATEMENT(S)

P201 OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.
P202 DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE BEEN READ AND UNDERSTOOD.
P210 KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. - NO SMOKING.
P233 KEEP CONTAINER TIGHTLY CLOSED.
P240 GROUND/BOND CONTAINER AND RECEIVING EQUIPMENT.
P241 USE EXPLOSION-PROOF ELECTRICAL/ VENTILATING/ LIGHTING/ EQUIPMENT.
P242 USE ONLY NON-SPARKING TOOLS.
P243 TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE.
P261 AVOID BREATHING DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.
P264 WASH SKIN THOROUGHLY AFTER HANDLING.
P271 USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA.
P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE PROTECTION/ FACE PROTECTION.
P303 + P361 + P353 IF ON SKIN (OR HAIR): REMOVE/ TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER.
P304 + P340 + P312 IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP COMFORTABLE FOR BREATHING. CALL A POISON CENTER/DOCTOR IF YOU FEEL UNWELL.
P305 + P351 + P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING.
P308 + P313 IF EXPOSED OR CONCERNED: GET MEDICAL ADVICE/ ATTENTION.
P337 + P313 IF EYE IRRITATION PERSISTS: GET MEDICAL ADVICE/ ATTENTION.
P363 WASH CONTAMINATED CLOTHING BEFORE REUSE.
P370 + P378 IN CASE OF FIRE: USE DRY SAND, DRY CHEMICAL OR ALCOHOL-RESISTANT FOAM TO EXTINGUISH.
P403 + P235 STORE IN A WELL-VENTILATED PLACE. KEEP COOL.
P405 STORE LOCKED UP.
P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED WASTE DISPOSAL PLANT.

HAZARDS NOT RAPIDLY ABSORBED THROUGH SKIN.

OTHERWISE
CLASSIFIED
(HNOC) OR NOT
COVERED BY GHS

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: C₃H₇NO

MW: 73.1

CAS-NO. 68-12-2

PURITY: ≥ 99% (GC)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
N,N-DIMETHYLFORMAMIDE		
	FLAM. LIQ. 3; ACUTE TOX. 4; EYE IRRIT. 2A; REPR. 1B; H226, H332, H312, H319, H360	≤ 100 %

FOR THE FULL TEXT OF THE H-STATEMENTS MENTIONED IN THIS SECTION, SEE SECTION 16.

SECTION 4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES

GENERAL ADVICE	SHOW THIS MATERIAL SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.
IF INHALED	AFTER INHALATION: FRESH AIR. IMMEDIATELY CALL IN PHYSICIAN. IF BREATHING STOPS: IMMEDIATELY APPLY ARTIFICIAL RESPIRATION, IF NECESSARY ALSO OXYGEN.
IN CASE OF SKIN CONTACT	IN CASE OF SKIN CONTACT: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	AFTER EYE CONTACT: RINSE OUT WITH PLENTY OF WATER. CALL IN OPHTHALMOLOGIST. REMOVE CONTACT LENSES.
IF SWALLOWED	AFTER SWALLOWING: IMMEDIATELY MAKE VICTIM DRINK WATER (TWO GLASSES AT MOST). CONSULT A PHYSICIAN.

MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

NO DATA AVAILABLE

SECTION 5. FIRE AND EXPLOSION DATA

EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA
WATER FOAM CARBON DIOXIDE (CO₂) DRY POWDER

UNSUITABLE EXTINGUISHING MEDIA
FOR THIS SUBSTANCE/MIXTURE NO LIMITATIONS OF EXTINGUISHING AGENTS ARE GIVEN.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

CARBON OXIDES
NITROGEN OXIDES (NO_x)
COMBUSTIBLE.
VAPORS ARE HEAVIER THAN AIR AND MAY SPREAD ALONG FLOORS.
FORMS EXPLOSIVE MIXTURES WITH AIR AT ELEVATED TEMPERATURES.
DEVELOPMENT OF HAZARDOUS COMBUSTION GASES OR VAPOURS POSSIBLE IN THE EVENT OF FIRE.

ADVICE FOR FIREFIGHTERS

STAY IN DANGER AREA ONLY WITH SELF-CONTAINED BREATHING APPARATUS. PREVENT SKIN CONTACT BY KEEPING A SAFE DISTANCE OR BY WEARING SUITABLE PROTECTIVE CLOTHING.

FURTHER INFORMATION

REMOVE CONTAINER FROM DANGER ZONE AND COOL WITH WATER. SUPPRESS (KNOCK DOWN) GASES/VAPORS/MISTS WITH A WATER SPRAY JET. PREVENT FIRE EXTINGUISHING WATER FROM CONTAMINATING SURFACE WATER OR THE GROUND WATER SYSTEM.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL

ADVICE FOR NON-EMERGENCY PERSONNEL: DO NOT

PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES	BREATHE VAPORS, AEROSOLS. AVOID SUBSTANCE CONTACT. ENSURE ADEQUATE VENTILATION. KEEP AWAY FROM HEAT AND SOURCES OF IGNITION. EVACUATE THE DANGER AREA, OBSERVE EMERGENCY PROCEDURES, CONSULT AN EXPERT. FOR PERSONAL PROTECTION SEE SECTION 8.
ENVIRONMENTAL PRECAUTIONS	DO NOT LET PRODUCT ENTER DRAINS. RISK OF EXPLOSION.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP	COVER DRAINS. COLLECT, BIND, AND PUMP OFF SPILLS. OBSERVE POSSIBLE MATERIAL RESTRICTIONS (SEE SECTIONS 7 AND 10). TAKE UP CAREFULLY WITH LIQUID-ABSORBENT MATERIAL. DISPOSE OF PROPERLY. CLEAN UP AFFECTED AREA.
REFERENCE TO OTHER SECTIONS	FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	WORK UNDER HOOD. DO NOT INHALE SUBSTANCE/MIXTURE. AVOID GENERATION OF VAPORS/AEROSOLS. ADVICE ON PROTECTION AGAINST FIRE AND EXPLOSION KEEP AWAY FROM OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE. HYGIENE MEASURES IMMEDIATELY CHANGE CONTAMINATED CLOTHING. APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS AND FACE AFTER WORKING WITH SUBSTANCE. FOR PRECAUTIONS SEE SECTION 2.2.
CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES	KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. KEEP AWAY FROM HEAT AND SOURCES OF IGNITION. KEEP LOCKED UP OR IN AN AREA ACCESSIBLE ONLY TO QUALIFIED OR AUTHORIZED PERSONS. HANDLE AND STORE UNDER INERT GAS. Store at RT
SPECIFIC END USE(S)	APART FROM THE USES MENTIONED IN SECTION 1.2 NO OTHER SPECIFIC USES ARE STIPULATED

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CONTROL PARAMETERS**COMPONENTS WITH WORKPLACE CONTROL PARAMETERS**

COMPONENT	CAS-NO.	VALUE	CONTROL PARAMETERS	BASIS
N,N-DIMETHYLFORMAMIDE	68-12-2	TWA	5 PPM	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
	REMARKS	CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN RELEVANCE TO HUMANS DANGER OF CUTANEOUS ABSORPTION		
		TWA	10 PPM 30 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
		POTENTIAL FOR DERMAL ABSORPTION		
		TWA	10 PPM 30 MG/M3	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
		SKIN DESIGNATION		
		PEL	10 PPM 30 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS
		SKIN		

BIOLOGICAL OCCUPATIONAL EXPOSURE LIMITS

COMPONENT	CAS-NO.	PARAMETERS	VALUE	BIOLOGICAL SPECIMEN	BASIS
N,N-DIMETHYLFORMAMIDE	68-12-2	TOTAL NMETHYLFORMAMIDE	30 MG/L	URINE	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
	REMARKS	END OF SHIFT (AS SOON AS POSSIBLE AFTER EXPOSURE CEASES)			
		N-ACETYL-S-(NMETHYL-CARBAMOYL) CYSTEINE	30 MG/L	URINE	ACGIH - BIOLOGICAL EXPOSURE INDICES (BEI)
		END OF SHIFT AT END OF WORKWEEK			

DERIVED NO EFFECT LEVEL (DNEL)

APPLICATION AREA	ROUTES OF EXPOSURE	HEALTH EFFECT	VALUE
WORKERS	INHALATION	LONG-TERM SYSTEMIC EFFECTS	6 MG/M3

WORKERS	DERMAL	LONG-TERM SYSTEMIC EFFECTS	1.1MG/KG BW/D
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PREDICTED NO EFFECT CONCENTRATION (PNEC)

COMPARTMENT	VALUE
FRESH WATER SEDIMENT	111 MG/KG
SEA SEDIMENT	11.1 MG/KG
SEWAGE TREATMENT PLANT	44 MG/L

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU). SAFETY GLASSES

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU). SAFETY GLASSES

SKIN PROTECTION THIS RECOMMENDATION APPLIES ONLY TO THE PRODUCT STATED IN THE SAFETY DATA SHEET, SUPPLIED BY US AND FOR THE DESIGNATED USE. WHEN DISSOLVING IN OR MIXING WITH OTHER SUBSTANCES AND UNDER CONDITIONS DEVIATING FROM THOSE STATED IN EN 16523-1 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES.

FULL CONTACT
MATERIAL: BUTYL-RUBBER
MINIMUM LAYER THICKNESS: 0.7 MM
BREAK THROUGH TIME: 480 MIN
MATERIAL TESTED:BUTOJECT® (KCL 898)

THIS RECOMMENDATION APPLIES ONLY TO THE PRODUCT STATED IN THE SAFETY DATA SHEET, SUPPLIED BY US AND FOR THE DESIGNATED USE. WHEN DISSOLVING IN OR MIXING WITH OTHER SUBSTANCES AND UNDER CONDITIONS DEVIATING FROM THOSE STATED IN EN 16523-1 PLEASE CONTACT THE SUPPLIER OF CE-APPROVED GLOVES.

SPLASH CONTACT
MATERIAL: VITON®
MINIMUM LAYER THICKNESS: 0.7 MM
BREAK THROUGH TIME: 240 MIN
MATERIAL TESTED:VITOJECT® (KCL 890, SIZE M)

BODY PROTECTION	COMPLETE SUIT PROTECTING AGAINST CHEMICALS, FLAME RETARDANT ANTISTATIC PROTECTIVE CLOTHING. THE TYPE OF PROTECTIVE EQUIPMENT MUST BE SELECTED ACCORDING TO THE CONCENTRATION AND AMOUNT OF THE DANGEROUS SUBSTANCE AT THE SPECIFIC WORKPLACE.
RESPIRATORY PROTECTION	RECOMMENDED FILTER TYPE: FILTER A-(P2) THE ENTREPRENEUR HAS TO ENSURE THAT MAINTENANCE, CLEANING AND TESTING OF RESPIRATORY PROTECTIVE DEVICES ARE CARRIED OUT ACCORDING TO THE INSTRUCTIONS OF THE PRODUCER. THESE MEASURES HAVE TO BE PROPERLY DOCUMENTED. REQUIRED WHEN VAPOURS/AEROSOLS ARE GENERATED. OUR RECOMMENDATIONS ON FILTERING RESPIRATORY PROTECTION ARE BASED ON THE FOLLOWING STANDARDS: DIN EN 143, DIN 14387 AND OTHER ACCOMPANYING STANDARDS RELATING TO THE USED RESPIRATORY PROTECTION SYSTEM.
CONTROL OF ENVIRONMENTAL EXPOSURE	DO NOT LET PRODUCT ENTER DRAINS. RISK OF EXPLOSION.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	CLEAR COLORLESS LIQUID
ODOUR	AMINE-LIKE
ODOUR THRESHOLD	0.329 PPM
PH	7 AT 200 G/L AT 20 °C
MELTING	- 61 °C (LIT.)
POINT/FREEZING POINT	
INITIAL BOILING POINT	153 °C (LIT.)
AND BOILING RANGE	
FLASH POINT	NO DATA AVAILABLE
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER	UPPER EXPLOSION LIMIT: 16 %(V)
FLAMMABILITY OR	LOWER EXPLOSION LIMIT: 2.2 %(V)
EXPLOSIVE LIMITS	
VAPOUR PRESSURE	3.77 HPA AT 20 °C
VAPOUR DENSITY	2.52 - (AIR = 1.0)
RELATIVE DENSITY	0.944 g/mL
WATER SOLUBILITY	1,000 G/L AT 20 °C - COMPLETELY MISCIBLE
PARTITION	LOG POW: -0.85 AT 25 °C - BIOACCUMULATION IS NOT
COEFFICIENT: N-	EXPECTED.
OCTANOL/WATER	

AUTO-IGNITION TEMPERATURE	435 °C AT 1,013 HPA
DECOMPOSITION TEMPERATURE	> 350 °C
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NONE

OTHER SAFETY INFORMATION

RELATIVE VAPOUR DENSITY	2.52 - (AIR = 1.0)
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SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	VAPOR/AIR-MIXTURES ARE EXPLOSIVE AT INTENSE WARMING.
CHEMICAL STABILITY	THE PRODUCT IS CHEMICALLY STABLE UNDER STANDARD AMBIENT CONDITIONS (ROOM TEMPERATURE).

POSSIBILITY OF HAZARDOUS REACTIONS	VIOLENT REACTIONS POSSIBLE WITH: ALKALI METALS HALOGENS HALIDES REDUCING AGENTS TRIETHYLALUMINIUM NITRATES METALLIC OXIDES NONMETALLIC OXIDES HALOGENATED HYDROCARBON ISOCYANATES SODIUM SODIUM BOROHYDRIDE HYDRIDES OXIDIZING AGENTS OXIDES OF PHOSPHORUS TIN STRONG OXIDIZING AGENTS RUBBER COPPER COPPER ALLOYS VARIOUS METALS A RISK OF EXPLOSION AND/OR OF TOXIC GAS FORMATION EXISTS WITH THE FOLLOWING SUBSTANCES: AZIDES BROMINE CHLORINE CHROMIUM(VI) OXIDE POTASSIUM PERMANGANATE TRIETHYLALUMINIUM CHLORATES HALOGENATED HYDROCARBON WITH IRON
CONDITIONS TO AVOID	HEATING.
INCOMPATIBLE MATERIALS	NO DATA AVAILABLE
HAZARDOUS DECOMPOSITION PRODUCTS	IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	LD50 ORAL - RAT - MALE AND FEMALE - 3,010 MG/KG ACUTE TOXICITY ESTIMATE INHALATION - 4 H - 11.1 MG/L – VAPOR (EXPERT JUDGMENT) REMARKS: (REGULATION (EC) NO 1272/2008, ANNEX VI) LD50 DERMAL - RABBIT - 1,500 MG/KG REMARKS: (REGULATION (EC) NO 1272/2008, ANNEX VI) (IUCLID) NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN – RABBIT RESULT: NO SKIN IRRITATION - 20 H REMARKS: (ECHA)
SERIOUS EYE DAMAGE/EYE IRRITATION	EYES – RABBIT RESULT: IRRITATING TO EYES. (OECD TEST GUIDELINE 405) REMARKS: (REGULATION (EC) NO 1272/2008, ANNEX VI)
RESPIRATORY OR SKIN SENSITISATION	LOCAL LYMPH NODE ASSAY (LLNA) – MOUSE RESULT: NEGATIVE

**GERM CELL
MUTAGENICITY**

TEST TYPE: SISTER CHROMATID EXCHANGE ASSAY
TEST SYSTEM: CHINESE HAMSTER OVARY CELLS
METABOLIC ACTIVATION: WITH AND WITHOUT
METABOLIC ACTIVATION

RESULT: NEGATIVE

REMARKS: (ECHA)

TEST TYPE: UNSCHEDULED DNA SYNTHESIS ASSAY
TEST SYSTEM: HUMAN DIPLOID FIBROBLASTS
METABOLIC ACTIVATION: WITH AND WITHOUT
METABOLIC ACTIVATION

RESULT: NEGATIVE

REMARKS: (ECHA)

TEST TYPE: AMES TEST

TEST SYSTEM: SALMONELLA TYPHIMURIUM
METABOLIC ACTIVATION: WITH AND WITHOUT
METABOLIC ACTIVATION

RESULT: NEGATIVE

REMARKS: (ECHA)

TEST TYPE: MICRONUCLEUS TEST

SPECIES: MOUSE

CELL TYPE: BONE MARROW

APPLICATION ROUTE: INTRAPERITONEAL INJECTION

RESULT: NEGATIVE

REMARKS: (ECHA)

TEST TYPE: DOMINANT LETHAL TEST

SPECIES: RAT

APPLICATION ROUTE: INHALATION

RESULT: NEGATIVE

REMARKS: (ECHA)

TEST TYPE: DOMINANT LETHAL TEST

SPECIES: MOUSE

APPLICATION ROUTE: INTRAPERITONEAL

RESULT: NEGATIVE

REMARKS: (ECHA)

CARCINOGENICITY

IARC:

2A - GROUP 2A: PROBABLY CARCINOGENIC TO
HUMANS (N,N-DIMETHYLFORMAMIDE)

NTP:

NO INGREDIENT OF THIS PRODUCT PRESENT AT
LEVELS GREATER THAN OR EQUAL TO 0.1% IS
IDENTIFIED AS A KNOWN OR ANTICIPATED
CARCINOGEN BY NTP.

OSHA:

NO COMPONENT OF THIS PRODUCT PRESENT AT
LEVELS GREATER THAN OR EQUAL TO 0.1% IS ON
OSHA'S LIST OF REGULATED CARCINOGENS.

**REPRODUCTIVE
TOXICITY**

MAY DAMAGE THE UNBORN CHILD.

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	NO DATA AVAILABLE
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	NO DATA AVAILABLE
ASPIRATION HAZARD	NO DATA AVAILABLE
ADDITIONAL INFORMATION	REPEATED DOSE TOXICITY - RAT - MALE AND FEMALE - ORAL - 28 D - NOAEL (NO OBSERVED ADVERSE EFFECT LEVEL) - 238 MG/KG - LOAEL (LOWEST OBSERVED ADVERSE EFFECT LEVEL) - 475 MG/KG REMARKS: SUBACUTE TOXICITY RTECS: LQ2100000 VOMITING DIARRHEA ABDOMINAL PAIN WARNING: INTOLERANCE FOR ALCOHOL CAN OCCUR UP TO 4 DAYS AFTER DIMETHYLFORMAMIDE EXPOSURE. N,N-DIMETHYLFORMAMIDE IS CONSIDERED TO BE A POTENT LIVER TOXIN. TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED. AFTER ABSORPTION: HEADACHE, DIZZINESS, DROWSINESS DAMAGE TO: KIDNEY, LIVER THIS SUBSTANCE SHOULD BE HANDLED WITH PARTICULAR CARE.

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY	
TOXICITY TO FISH	FLOW-THROUGH TEST LC50 - LEPOMIS MACROCHIRUS (BLUEGILL SUNFISH) - 7,100 MG/L - 96 H
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES	STATIC TEST EC50 - DAPHNIA MAGNA (WATER FLEA) - 13,100 MG/L - 48 H
TOXICITY TO ALGAE	STATIC TEST ERC50 - DESMODESMUS SUBSPICATUS (GREEN ALGAE) - > 1,000 MG/L - 72 H

TOXICITY TO BACTERIA	STATIC TEST EC50 - VIBRIO FISCHERI - 12,300 - 17,500 MG/L - 5 MIN REMARKS: (ECHA)
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES(CHRONIC TOXICITY)	SEMI-STATIC TEST NOEC - DAPHNIA MAGNA (WATER FLEA) - 1,500 MG/L - 21 D REMARKS: (ECHA)

PERSISTENCE AND DEGRADABILITY

BIODEGRADABILITY	AEROBIC - EXPOSURE TIME 21 D RESULT: 100 % - READILY BIODEGRADABLE.
BIOCHEMICAL OXYGEN DEMAND (BOD)	900 MG/G REMARKS: (LIT.)
THEORETICAL OXYGEN DEMAND	1,863 MG/G REMARKS: (LIT.)

BIOACCUMULATIVE POTENTIAL

BIOACCUMULATION	CYPRINUS CARPIO (CARP) - 56 D AT 25 °C - 0.002 MG/L(N,N-DIMETHYLFORMAMIDE) BIOCONCENTRATION FACTOR (BCF): 0.3 - 1.2 REMARKS: DOES NOT SIGNIFICANTLY ACCUMULATE IN ORGANISMS.
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MOBILITY IN SOIL	NO DATA AVAILABLE
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RESULTS OF PBT AND VPVB ASSESSMENT	PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL SAFETY ASSESSMENT NOT REQUIRED/NOT CONDUCTED
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OTHER ADVERSE EFFECTS

STABILITY IN WATER	- CA.50 D REMARKS: REACTION WITH HYDROXYL RADICALS (CALCULATED) (LIT.)
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SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS

PRODUCT	WASTE MATERIAL MUST BE DISPOSED OF IN ACCORDANCE WITH THE NATIONAL AND LOCAL REGULATIONS. LEAVE CHEMICALS IN ORIGINAL CONTAINERS. NO MIXING WITH OTHER WASTE. HANDLE UNCLEARED CONTAINERS LIKE THE PRODUCT ITSELF.
CONTAMINATED PACKAGING	DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: N,N-DIMETHYLFORMAMIDE
UN NUMBER: 2265
CLASS: 3
PACKING GROUP: III
REPORTABLE QUANTITY 100 LBS
(RQ):
POISON INHALATION NO
HAZARD:

IMDG

PROPER SHIPPING NAME: N,N-DIMETHYLFORMAMIDE
UN NUMBER: 2265
CLASS: 3
PACKING GROUP: III
EMS-NO: F-E, S-D

IATA

PROPER SHIPPING NAME: N,N-DIMETHYLFORMAMIDE
UN NUMBER: 2265
CLASS: 3
PACKING GROUP: III

SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS THIS MATERIAL DOES NOT CONTAIN ANY COMPONENTS
WITH A SECTION 302 EHS TPQ.

SARA 313 COMPONENTS THE FOLLOWING COMPONENTS ARE SUBJECT TO
REPORTING LEVELS ESTABLISHED BY SARA TITLE III,
SECTION 313:

	CAS-NO.	REVISION DATE
N,N- DIMETHYLFORMAMIDE	68-12-2	02/24/2020

SARA 311/312 HAZARDS FIRE HAZARD, ACUTE HEALTH HAZARD, CHRONIC
HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

	CAS-NO.	REVISION DATE
N,N- DIMETHYLFORMAMIDE	68-12-2	02/24/2020

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

	CAS-NO.	REVISION DATE
N,N- DIMETHYLFORMAMIDE	68-12-2	02/24/2020

**CALIFORNIA PROP. 65
COMPONENTS**

N,N-
DIMETHYLFORMAMIDE

WARNING! THIS PRODUCT CONTAINS A CHEMICAL
KNOWN TO THE STATE OF CALIFORNIA TO CAUSE
CANCER.

CAS-NO.
68-12-2

REVISION DATE
10/27/2017

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.

H226	FLAMMABLE LIQUID AND VAPOUR.
H312 + H332	HARMFUL IN CONTACT WITH SKIN OR IF INHALED
H319	CAUSES SERIOUS EYE IRRITATION.
H360	MAY DAMAGE FERTILITY OR THE UNBORN CHILD.

MSDS LEGEND

MW:	MOLECULAR WEIGHT
MF:	MOLECULAR FORMULA
VOC:	VOLATILE ORGANIC COMPOUNDS
ACGIH:	AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGINISTS
CAS:	CHEMICAL ABSTRACTS SERIVE REGISTRY NUMBER
OSHA:	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
PEL:	PERMISSIBLE EXPOSURE LIMIT (OSHA)
TLV:	THRESHOLD LIMIT VALUE (ACGIH)

IMPORTANT:

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VERSION: 3.2

REVISION DATE: 06/30/2025