

# ***Chem-Impex International Inc.***

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

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### **SECTION 1.   CHEMICAL IDENTIFICATION**

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CATALOG #:	47660
NAME:	N,N-Dimethylformamide [for Spectrophotometry]
SYNONYMS:	<i>N-Formyldimethylamine</i>
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA)  352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
CUSTOMER SERVICE:	(630) 766-2112

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### **SECTION 2.   HAZARDS IDENTIFICATION**

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#### **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  
OTHERWISE  
CLASSIFIED  
(HNOC) OR NOT  
COVERED BY GHS**

RAPIDLY ABSORBED THROUGH SKIN.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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MF: C<sub>3</sub>H<sub>7</sub>NO  
MW: 73.10  
CAS-NO. 68-12-2  
PURITY: ≥ 99.5% (GC)

#### HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
<b>N,N-Dimethylformamide [for Spectrophotometry]</b>		
	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.

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### SECTION 4. FIRST-AID MEASURES

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#### DESCRIPTION OF FIRST AID MEASURES

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

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**SECTION 5. FIRE AND EXPLOSION DATA**

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**EXTINGUISHING MEDIA**

**SUITABLE EXTINGUISHING MEDIA**

SUITABLE EXTINGUISHING MEDIA  
WATER FOAM CARBON DIOXIDE (CO<sub>2</sub>) 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<sub>x</sub>)  
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.

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

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<b>PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES</b>	ADVICE FOR NON-EMERGENCY PERSONNEL: DO NOT 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.
<b>ENVIRONMENTAL PRECAUTIONS</b>	DO NOT LET PRODUCT ENTER DRAINS. RISK OF EXPLOSION.
<b>METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP</b>	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.
<b>REFERENCE TO OTHER SECTIONS</b>	FOR DISPOSAL SEE SECTION 13.

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## **SECTION 7. HANDLING AND STORAGE**

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<b>PRECAUTIONS FOR SAFE HANDLING</b>	<p>WORK UNDER HOOD. DO NOT INHALE SUBSTANCE/MIXTURE. AVOID GENERATION OF VAPORS/AEROSOLS.</p> <p>ADVICE ON PROTECTION AGAINST FIRE AND EXPLOSION</p> <p>KEEP AWAY FROM OPEN FLAMES, HOT SURFACES AND SOURCES OF IGNITION. TAKE PRECAUTIONARY MEASURES AGAINST STATIC DISCHARGE.</p> <p>HYGIENE MEASURES</p> <p>IMMEDIATELY CHANGE CONTAMINATED CLOTHING. APPLY PREVENTIVE SKIN PROTECTION. WASH HANDS AND FACE AFTER WORKING WITH SUBSTANCE. FOR PRECAUTIONS SEE SECTION 2.2.</p>
<b>CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES</b>	<p>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.</p> <p>HANDLE AND STORE UNDER INERT GAS.</p> <p>Store at RT</p>
<b>SPECIFIC END USE(S)</b>	APART FROM THE USES MENTIONED IN SECTION 1.2 NO OTHER SPECIFIC USES ARE STIPULATED

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

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**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-ACETYLS- (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)

<b>BODY PROTECTION</b>	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.
<b>RESPIRATORY PROTECTION</b>	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.
<b>CONTROL OF ENVIRONMENTAL EXPOSURE</b>	DO NOT LET PRODUCT ENTER DRAINS. RISK OF EXPLOSION.

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## SECTION 9.      PHYSICAL AND CHEMICAL PROPERTIES

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### 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	58 °C
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
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 DECOMPOSITION TEMPERATURE VISCOSITY EXPLOSIVE PROPERTIES OXIDIZING PROPERTIES	435 °C AT 1,013 HPA  > 350 °C  NO DATA AVAILABLE NO DATA AVAILABLE  NONE
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**OTHER SAFETY INFORMATION**

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

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<b>REACTIVITY</b>	VAPOR/AIR-MIXTURES ARE EXPLOSIVE AT INTENSE WARMING.
<b>CHEMICAL STABILITY</b>	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

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**SECTION 11. TOXICOLOGICAL INFORMATION**

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**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.

<b>SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE</b>	NO DATA AVAILABLE
<b>SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE</b>	NO DATA AVAILABLE
<b>ASPIRATION HAZARD</b>	NO DATA AVAILABLE
<b>ADDITIONAL INFORMATION</b>	<p>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</p> <p>RTECS: LQ2100000</p> <p>VOMITING DIARRHEA ABDOMINAL PAIN</p> <p>WARNING: INTOLERANCE FOR ALCOHOL CAN OCCUR UP TO 4 DAYS AFTER DIMETHYLFORMAMIDE EXPOSURE. N,N-DIMETHYLFORMAMIDE IS CONSIDERED TO BE A POTENT LIVER TOXIN.</p> <p>TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.</p> <p>AFTER ABSORPTION: HEADACHE, DIZZINESS, DROWSINESS</p> <p>DAMAGE TO: KIDNEY, LIVER</p> <p>THIS SUBSTANCE SHOULD BE HANDLED WITH PARTICULAR CARE.</p>

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## SECTION 12. ECOLOGICAL INFORMATION

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<b>TOXICITY</b>	
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**

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#### **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 UNCLEANNED CONTAINERS LIKE THE PRODUCT ITSELF.
CONTAMINATED PACKAGING	DISPOSE OF AS UNUSED PRODUCT.

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**SECTION 14.      TRANSPORT INFORMATION**

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**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

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**SECTION 15.      REGULATORY INFORMATION**

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**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

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**SECTION 16. OTHER INFORMATION**

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**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