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

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	280058
NAME:	Dimethyl sulfoxide
SYNONYMS:	DMSO Methyl sulfoxide
24 HOUR EMERGENCY TELEPHONE:	Within USA/Canada: +1 800-633-8253 Outside USA/Canada: +1 801-629-0667
TO REQUEST AN MSDS:	+1 888-535-2444
CUSTOMER SERVICE:	+1 888-535-2444

SECTION 2. HAZARDS IDENTIFICATION

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

GHS CLASSIFICATION IN ACCORDANCE WITH 29 CFR 1910 (OSHA HCS)
FLAMMABLE LIQUIDS (CATEGORY 4), H227

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

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

SIGNAL WORD WARNING

HAZARD STATEMENT(S)

H227 COMBUSTIBLE LIQUID.

PRECAUTIONARY STATEMENT(S)

P210 KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. NO SMOKING.

P280 WEAR PROTECTIVE GLOVES/ EYE PROTECTION/ FACE PROTECTION.

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.

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.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: C₂H₆SO
MW: 78.13
CAS-NO. 67-68-5
PURITY: ≥ 99.9% (GC)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
Dimethyl sulfoxide	FLAM. LIQ. 4; H227	<= 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	CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.MOVE OUT OF DANGEROUS AREA.
IF INHALED	IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN.
IN CASE OF SKIN CONTACT	WASH OFF WITH SOAP AND PLENTY OF WATER. CONSULT A PHYSICIAN.
IN CASE OF EYE CONTACT	FLUSH EYES WITH WATER AS A PRECAUTION.
IF SWALLOWED	DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. 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
USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE.

UNSUITABLE EXTINGUISHING MEDIA
DO NOT USE WATER JET.

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

CARBON OXIDES, SULPHUR OXIDES

ADVICE FOR FIREFIGHTERS

WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY.

FURTHER INFORMATION

USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

AVOID BREATHING VAPOURS, MIST OR GAS. REMOVE ALL SOURCES OF IGNITION. BEWARE OF VAPOURS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPOURS CAN ACCUMULATE IN LOW AREAS.
FOR PERSONAL PROTECTION SEE SECTION 8.

ENVIRONMENTAL PRECAUTIONS

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

CONTAIN SPILLAGE, AND THEN COLLECT WITH NON-COMBUSTIBLE ABSORBENT MATERIAL, (E.G. SAND, EARTH, DIATOMACEOUS EARTH, VERMICULITE) AND PLACE IN CONTAINER FOR DISPOSAL ACCORDING TO LOCAL / NATIONAL REGULATIONS (SEE SECTION 13). KEEP IN SUITABLE, CLOSED CONTAINERS FOR DISPOSAL.

REFERENCE TO OTHER SECTIONS

FOR DISPOSAL SEE SECTION 13.

SECTION 7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING	AVOID INHALATION OF VAPOUR OR MIST. KEEP AWAY FROM SOURCES OF IGNITION - NO SMOKING.TAKE MEASURES TO PREVENT THE BUILD UP OF ELECTROSTATIC CHARGE. FOR PRECAUTIONS SEE SECTION 2.2.
CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES	KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. STORE UNDER INERT GAS. HYGROSCOPIC 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
Dimethyl sulfoxide	67-68-5	TWA	250 PPM	USA. WORKPLACE ENVIRONMENTAL EXPOSURE LEVELS (WEEL)

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS	HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE BREAKS AND AT THE END OF WORKDAY.
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PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION	SAFETY GLASSES WITH SIDE-SHIELDS CONFORMING TO EN166 USE EQUIPMENT FOR EYE PROTECTION TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR EN 166(EU).
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SKIN PROTECTION

HANDLE WITH GLOVES. GLOVES MUST BE INSPECTED PRIOR TO USE. USE PROPER GLOVE REMOVAL TECHNIQUE (WITHOUT TOUCHING GLOVE'S OUTER SURFACE) TO AVOID SKIN CONTACT WITH THIS PRODUCT. DISPOSE OF CONTAMINATED GLOVES AFTER USE IN ACCORDANCE WITH APPLICABLE LAWS AND GOOD LABORATORY PRACTICES. WASH AND DRY HANDS.

SPLASH CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.2 MM

BREAK THROUGH TIME: 38 MIN

MATERIAL TESTED:DERMATRIL P (KCL 743 , SIZE M)

IF USED IN SOLUTION, OR MIXED WITH OTHER SUBSTANCES, AND UNDER CONDITIONS WHICH DIFFER FROM EN 374, CONTACT THE SUPPLIER OF THE CE APPROVED GLOVES. THIS RECOMMENDATION IS ADVISORY ONLY AND MUST BE EVALUATED BY AN INDUSTRIAL HYGIENIST AND SAFETY OFFICER FAMILIAR WITH THE SPECIFIC SITUATION OF ANTICIPATED USE BY OUR CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

BODY PROTECTION

IMPERVIOUS 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

WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING RESPIRATORS ARE APPROPRIATE USE A FULLFACE RESPIRATOR WITH MULTI-PURPOSE COMBINATION (US) OR TYPE ABEK (EN 14387) RESPIRATOR CARTRIDGES AS A BACKUP TO ENGINEERING CONTROLS. IF THE RESPIRATOR IS THE SOLE MEANS OF PROTECTION, USE A FULL-FACE SUPPLIED AIR RESPIRATOR. USE RESPIRATORS AND COMPONENTS TESTED AND APPROVED UNDER APPROPRIATE GOVERNMENT STANDARDS SUCH AS NIOSH (US) OR CEN (EU).

CONTROL OF ENVIRONMENTAL EXPOSURE

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Clear, colorless liquid
ODOUR	SULPHUROUS
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	NOT APPLICABLE

MELTING POINT/FREEZING POINT	
INITIAL BOILING POINT AND BOILING RANGE	188 - 190 °C
FLASH POINT	
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	UPPER EXPLOSION LIMIT: 42 %(V) LOWER EXPLOSION LIMIT: 3.5 %(V)
VAPOUR PRESSURE	0.55 HPA AT 20 C 4 HPA AT 50 C
VAPOUR DENSITY	2.70 - (AIR = 1.0)
RELATIVE DENSITY	1.10
WATER SOLUBILITY	COMPLETELY MISCIBLE
PARTITION COEFFICIENT: N- OCTANOL/WATER	LOG POW: -1.35
AUTO-IGNITION TEMPERATURE	300 - 302 C
DECOMPOSITION TEMPERATURE	> 190 C
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NOT EXPLOSIVE
OXIDIZING PROPERTIES	THE SUBSTANCE OR MIXTURE IS NOT CLASSIFIED AS OXIDIZING.

OTHER SAFETY INFORMATION

SOLUBILITY IN OTHER SOLVENTS	ALCOHOL - SOLUBLE DIETHYLEETHER - SOLUBLE
SURFACE TENSION	43.5 MN/M AT 20 C
RELATIVE VAPOUR DENSITY	2.70 - (AIR = 1.0)

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	NO DATA AVAILABLE
CHEMICAL STABILITY	STABLE UNDER RECOMMENDED STORAGE CONDITIONS.
POSSIBILITY OF HAZARDOUS REACTIONS	NO DATA AVAILABLE
CONDITIONS TO AVOID	HEAT, FLAMES AND SPARKS
INCOMPATIBLE MATERIALS	ACID CHLORIDES, PHOSPHORUS HALIDES, STRONG ACIDS, STRONG OXIDIZING AGENTS, STRONG REDUCING AGENTS
HAZARDOUS DECOMPOSITION PRODUCTS	HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON OXIDES, SULPHUR OXIDES OTHER DECOMPOSITION PRODUCTS - NO DATA AVAILABLE IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY	LD50 ORAL - RAT - MALE AND FEMALE - 28,300 MG/KG LC0 INHALATION - RAT - MALE AND FEMALE - 4 H - > 5.33 MG/L LD50 DERMAL - RAT - MALE AND FEMALE - 40,000 MG/KG REMARKS: (ECHA) NO DATA AVAILABLE
SKIN CORROSION/IRRITATION	SKIN - RABBIT RESULT: SLIGHT IRRITATION - 4 H
SERIOUS EYE DAMAGE/EYE IRRITATION	EYES - RABBIT RESULT: SLIGHT IRRITATION - 24 H
RESPIRATORY OR SKIN SENSITISATION	MAXIMISATION TEST - GUINEA PIG RESULT: NEGATIVE LOCAL LYMPH NODE ASSAY (LLNA) - MOUSE RESULT: NEGATIVE
GERM CELL MUTAGENICITY	AMES TEST SALMONELLA TYPHIMURIUM RESULT: NEGATIVE SISTER CHROMATID EXCHANGE ASSAY CHINESE HAMSTER OVARY CELLS RESULT: NEGATIVE MUTAGENICITY (MAMMAL CELL TEST): CHROMOSOME ABERRATION. CHINESE HAMSTER OVARY CELLS RESULT: NEGATIVE RAT - MALE AND FEMALE RESULT: NEGATIVE
CARCINOGENICITY	
IARC:	NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS PROBABLE, POSSIBLE OR CONFIRMED HUMAN CARCINOGEN BY IARC.
NTP:	NO COMPONENT 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	NO DATA AVAILABLE

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	<p>REPEATED DOSE TOXICITY - RAT - MALE AND FEMALE - ORAL - 18 MONTHS - NO OBSERVED ADVERSE EFFECT LEVEL - 3,300 MG/KG - LOWEST OBSERVED ADVERSE EFFECT LEVEL - 9,900 MG/KG</p> <p>REPEATED DOSE TOXICITY - MONKEY - MALE AND FEMALE - DERMAL - 18 MONTHS - NO OBSERVED ADVERSE EFFECT LEVEL - >= 8,910 MG/KG - LOWEST OBSERVED ADVERSE EFFECT LEVEL - 990 MG/KG</p> <p>RTECS: PV6210000</p> <p>EXPOSURE TO LARGE AMOUNTS CAN CAUSE:, REDNESS OF SKIN, ITCHING, BURNING, SEDATION, HEADACHE, NAUSEA, DIZZINESS TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.</p> <p>EYES - EYE DISEASE - BASED ON HUMAN EVIDENCE</p>

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY	
TOXICITY TO FISH	STATIC TEST LC50 - DANIO RERIO (ZEBRA FISH) - > 25,000 MG/L - 96 H
TOXICITY TO DAPHNIA AND OTHER AQUATIC INVERTEBRATES	STATIC TEST EC50 - DAPHNIA MAGNA (WATER FLEA) - 24,600 MG/L - 48 H
TOXICITY TO ALGAE	STATIC TEST ERC50 - PSEUDOKIRCHNERIELLA SUBCAPITATA (GREEN ALGAE) - 17,000 MG/L - 72 H
TOXICITY TO BACTERIA	EC50 - ACTIVATED SLUDGE - 10 - 100 MG/L - 30 MIN (ISO 8192)
PERSISTENCE AND DEGRADABILITY	
BIODEGRADABILITY	AEROBIC - EXPOSURE TIME 28 D RESULT: 31 % - NOT READILY BIODEGRADABLE.
BIOACCUMULATIVE POTENTIAL	NO DATA AVAILABLE

MOBILITY IN SOIL

NO DATA AVAILABLE

**RESULTS OF PBT AND
VPVB ASSESSMENT**PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL
SAFETY ASSESSMENT NOT REQUIRED/NOT
CONDUCTED**OTHER ADVERSE EFFECTS**

STABILITY IN WATER

0.12 - 1.2 H AT 30 C

REMARKS: HYDROLYSES READILY.

SECTION 13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS**PRODUCT**OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO
A LICENSED DISPOSAL COMPANY. THIS COMBUSTIBLE
MATERIAL MAY BE BURNED IN A CHEMICAL
INCINERATOR EQUIPPED WITH AN AFTERBURNER AND
SCRUBBER.**CONTAMINATED
PACKAGING**

DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME:

COMBUSTIBLE LIQUID, N.O.S. (Dimethyl sulfoxide)

NA-NUMBER:

1993

CLASS:

NONE

PACKING GROUP:

III

REPORTABLE QUANTITY

(RQ):

POISON INHALATION

NO

HAZARD:

IMDG

NOT DANGEROUS GOODS

IATA

NOT DANGEROUS GOODS

SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTSNO CHEMICALS IN THIS MATERIAL ARE SUBJECT TO
THE REPORTING REQUIREMENTS OF SARA TITLE III,
SECTION 302.

SARA 313 COMPONENTS THIS MATERIAL DOES NOT CONTAIN ANY CHEMICAL COMPONENTS WITH KNOWN CAS NUMBERS THAT EXCEED THE THRESHOLD (DE MINIMIS) REPORTING LEVELS ESTABLISHED BY SARA TITLE III, SECTION 313.

SARA 311/312 HAZARDS FIRE HAZARD, CHRONIC HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS NO COMPONENTS ARE SUBJECT TO THE MASSACHUSETTS RIGHT TO KNOW ACT.

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

	CAS-NO.	REVISION DATE
Dimethyl sulfoxide	67-68-5	03-01-2007

NEW JERSEY RIGHT TO KNOW COMPONENTS

	CAS-NO.	REVISION DATE
Dimethyl sulfoxide	67-68-5	03-01-2007

CALIFORNIA PROP. 65 COMPONENTS

THIS PRODUCT DOES NOT CONTAIN ANY CHEMICALS KNOWN TO STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR ANY OTHER REPRODUCTIVE HARM.

SECTION 16. OTHER INFORMATION

FULL TEXT OF H-STATEMENTS REFERRED TO UNDER SECTIONS 2 AND 3.
H227 COMBUSTIBLE LIQUID.

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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