

# *Chem-Impex International Inc.*

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## SAFETY DATA SHEET

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### SECTION 1. CHEMICAL IDENTIFICATION

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CATALOG #:	00635
NAME:	Dimethyl sulfoxide
SYNONYMS:	DMSO Methyl sulfoxide
24 HOUR EMERGENCY TELEPHONE:	(800) 535-5053(USA) 352-323-3500 (INTERNATIONAL)
TO REQUEST AN MSDS:	(800) 869-9290
CUSTOMER SERVICE:	(630) 766-2112

### 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 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.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

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MF:                                      C<sub>2</sub>H<sub>6</sub>SO

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.

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**SECTION 4. FIRST-AID MEASURES**

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## DESCRIPTION OF FIRST AID MEASURES

<b>GENERAL ADVICE</b>	CONSULT A PHYSICIAN. SHOW THIS SAFETY DATA SHEET TO THE DOCTOR IN ATTENDANCE.MOVE OUT OF DANGEROUS AREA.
<b>IF INHALED</b>	IF BREATHED IN, MOVE PERSON INTO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. CONSULT A PHYSICIAN.
<b>IN CASE OF SKIN CONTACT</b>	WASH OFF WITH SOAP AND PLENTY OF WATER. CONSULT A PHYSICIAN.
<b>IN CASE OF EYE CONTACT</b>	FLUSH EYES WITH WATER AS A PRECAUTION.
<b>IF SWALLOWED</b>	DO NOT INDUCE VOMITING. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. RINSE MOUTH WITH WATER. CONSULT A PHYSICIAN.
<b>MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED</b>	THE MOST IMPORTANT KNOWN SYMPTOMS AND EFFECTS ARE DESCRIBED IN THE LABELLING (SEE SECTION 2.2) AND/OR IN SECTION 11.
<b>INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED</b>	NO DATA AVAILABLE

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## SECTION 5. FIRE AND EXPLOSION DATA

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### EXTINGUISHING MEDIA

<b>SUITABLE EXTINGUISHING MEDIA</b>	SUITABLE EXTINGUISHING MEDIA USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY CHEMICAL OR CARBON DIOXIDE.
	UNSUITABLE EXTINGUISHING MEDIA DO NOT USE WATER JET.
<b>SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE</b>	CARBON OXIDES, SULPHUR OXIDES COMBUSTIBLE LIQUID.
<b>ADVICE FOR FIREFIGHTERS</b>	WEAR SELF CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING IF NECESSARY.
<b>FURTHER INFORMATION</b>	USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

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<b>PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES</b>	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.
<b>ENVIRONMENTAL PRECAUTIONS</b>	PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.
<b>METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP</b>	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.
<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>	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.
<b>CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES</b>	KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE.  STORE UNDER INERT GAS. HYGROSCOPIC  Store at RT
<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**

<b>COMPONENT</b>	<b>CAS-NO.</b>	<b>VALUE</b>	<b>CONTROL PARAMETERS</b>	<b>BASIS</b>
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.

**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).

**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.

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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	ODOURLESS
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	NOT APPLICABLE
MELTING POINT/FREEZING POINT	
INITIAL BOILING POINT AND BOILING RANGE	188 - 190 °C (Approx.)
FLASH POINT	
EVAPORATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	UPPER EXPLOSION LIMIT: 28.5 %(V) LOWER EXPLOSION LIMIT: 2.6 %(V)
VAPOUR PRESSURE	0.55 HPA AT 20 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 AT 20 C - BIOACCUMULATION IS NOT EXPECTED.
AUTO-IGNITION TEMPERATURE	300 - 302 C AT 1,013 HPA
DECOMPOSITION TEMPERATURE	> 190 C
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE

**OTHER SAFETY INFORMATION**

SOLUBILITY IN OTHER SOLVENTS	ALCOHOL - SOLUBLE DIETHYLEETHER - SOLUBLE
SURFACE TENSION	43.5 MN/M AT 20 C

DISSOCIATION CONSTANT	35.1
RELATIVE VAPOUR DENSITY	2.70 - (AIR = 1.0)

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## SECTION 10. STABILITY AND REACTIVITY

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<b>REACTIVITY</b>	NO DATA AVAILABLE
<b>CHEMICAL STABILITY</b>	STABLE UNDER RECOMMENDED STORAGE CONDITIONS.
<b>POSSIBILITY OF HAZARDOUS REACTIONS</b>	NO DATA AVAILABLE
<b>CONDITIONS TO AVOID</b>	HEAT, FLAMES AND SPARKS
<b>INCOMPATIBLE MATERIALS</b>	ACID CHLORIDES, PHOSPHORUS HALIDES, STRONG ACIDS, STRONG OXIDIZING AGENTS, STRONG REDUCING AGENTS
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	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

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## SECTION 11. TOXICOLOGICAL INFORMATION

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### INFORMATION ON TOXICOLOGICAL EFFECTS

<b>ACUTE TOXICITY</b>	LD50 ORAL - RAT - MALE AND FEMALE - 28,300 MG/KG (OECD TEST GUIDELINE 401)
	LC0 INHALATION - RAT - MALE AND FEMALE - 4 H - > 5.33 MG/L (OECD TEST GUIDELINE 403)
	LD50 DERMAL - RAT - MALE AND FEMALE - 40,000 MG/KG REMARKS: (ECHA)
	NO DATA AVAILABLE

<b>SKIN CORROSION/IRRITATION</b>	SKIN RABBIT RESULT: SLIGHT IRRITATION - 4 H
<b>SERIOUS EYE DAMAGE/EYE IRRITATION</b>	EYES - RABBIT RESULT: SLIGHT IRRITATION - 24 H
<b>RESPIRATORY OR SKIN SENSITISATION</b>	MAXIMISATION TEST - GUINEA PIG RESULT: NEGATIVE  LOCAL LYMPH NODE ASSAY (LLNA) - MOUSE RESULT: NEGATIVE
<b>GERM CELL MUTAGENICITY</b>	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 OECD TEST GUIDELINE 474 RAT - MALE AND FEMALE RESULT: NEGATIVE
<b>CARCINOGENICITY</b>	
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.
<b>REPRODUCTIVE TOXICITY</b>	NO DATA AVAILABLE
<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



**ADDITIONAL  
INFORMATION**

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

REPEATED DOSE TOXICITY - MONKEY - MALE AND  
FEMALE - DERMAL - 18 MONTHS - NO OBSERVED  
ADVERSE EFFECT LEVEL -  $\geq$  8,910 MG/KG - LOWEST  
OBSERVED ADVERSE EFFECT LEVEL - 990 MG/KG

RTECS: PV6210000

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.

EYES - EYE DISEASE - BASED ON HUMAN EVIDENCE

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**SECTION 12. ECOLOGICAL INFORMATION**

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**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.

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**SECTION 13. DISPOSAL CONSIDERATIONS**

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**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.

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**SECTION 14. TRANSPORT INFORMATION**

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**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 HAZARD: NO

HAZARD:

**IMDG**

NOT DANGEROUS GOODS

**IATA**

NOT DANGEROUS GOODS

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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** 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

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**SECTION 16. OTHER INFORMATION**

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**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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