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SAFETY DATA SHEET

SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #:	30609
NAME:	Manganese (II) chloride dihydrate
SYNONYMS:	Manganese dichloride dihydrate
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

CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

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

ACUTE TOXICITY, ORAL (CATEGORY 3), H301

SERIOUS EYE DAMAGE (CATEGORY 1), H318

SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (CATEGORY 2), BRAIN, H373

SHORT-TERM (ACUTE) AQUATIC HAZARD (CATEGORY 3), H402

LONG-TERM (CHRONIC) AQUATIC HAZARD (CATEGORY 2), H411

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)

H301 TOXIC IF SWALLOWED.
H318 CAUSES SERIOUS EYE DAMAGE.
H373 MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.
H402 HARMFUL TO AQUATIC LIFE
H411 TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

PRECAUTIONARY STATEMENT(S)

P260 DO NOT BREATHE DUST/ FUME/ GAS/ MIST/ VAPOURS/ SPRAY.
P264 WASH SKIN THOROUGHLY AFTER HANDLING.
P270 DO NOT EAT, DRINK OR SMOKE WHEN USING THIS PRODUCT.
P273 AVOID RELEASE TO THE ENVIRONMENT.
P280 WEAR EYE PROTECTION/ FACE PROTECTION
P301 + P310 + P330 IF SWALLOWED: IMMEDIATELY CALL A POISON CENTER/DOCTOR. RINSE MOUTH.
P305 + P351 + P338 + P310 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A POISON CENTER/DOCTOR.
P314 GET MEDICAL ADVICE/ ATTENTION IF YOU FEEL UNWELL.
P391 COLLECT SPILLAGE.
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 NONE

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF: $\text{MnCl}_2 \cdot 2\text{H}_2\text{O}$
MW: 161.87
CAS-NO. 20603-88-7
PURITY: $\geq 99\%$ (Assay)

HAZARDOUS COMPONENTS

COMPONENT	CLASSIFICATION	CONCENTRATION
Manganese (II) chloride dihydrate		
	ACUTE TOX. 3; EYE DAM. 1; STOT RE 2; AQUATIC ACUTE 3; AQUATIC CHRONIC 2; H301, H318, H373, H402, H411	<= 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.
IN CASE OF SKIN CONTACT	IN CASE OF SKIN CONTACT: TAKE OFF IMMEDIATELY ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/ SHOWER.
IN CASE OF EYE CONTACT	AFTER EYE CONTACT: RINSE OUT WITH PLENTY OF WATER. CALL IN OPHTHALMOLOGIST. REMOVE CONTACT LENSES.
IF SWALLOWED	IF SWALLOWED: GIVE WATER TO DRINK (TWO GLASSES AT MOST). SEEK MEDICAL ADVICE IMMEDIATELY. IN EXCEPTIONAL CASES ONLY, IF MEDICAL CARE IS NOT AVAILABLE WITHIN ONE HOUR, INDUCE VOMITING (ONLY IN PERSONS WHO ARE WIDE AWAKE AND FULLY CONSCIOUS), ADMINISTER ACTIVATED CHARCOAL (20 - 40 G IN A 10% SLURRY) AND CONSULT A DOCTOR AS QUICKLY AS POSSIBLE.
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 EXTINGUISHING MEASURES THAT ARE APPROPRIATE
TO LOCAL CIRCUMSTANCES AND THE SURROUNDING
ENVIRONMENT.

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

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

NATURE OF DECOMPOSITION PRODUCTS NOT KNOWN.
NOT COMBUSTIBLE.
FIRE MAY CAUSE EVOLUTION OF:
HYDROGEN CHLORIDE GAS
AMBIENT FIRE MAY LIBERATE HAZARDOUS VAPOURS.

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

PREVENT FIRE EXTINGUISHING WATER FROM
CONTAMINATING SURFACE WATER OR THE GROUND
WATER SYSTEM.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

ADVICE FOR NON-EMERGENCY PERSONNEL: AVOID
INHALATION OF DUSTS. AVOID SUBSTANCE CONTACT.
ENSURE ADEQUATE VENTILATION. EVACUATE THE
DANGER AREA, OBSERVE EMERGENCY PROCEDURES,
CONSULT AN EXPERT.

FOR PERSONAL PROTECTION SEE SECTION 8.

ENVIRONMENTAL PRECAUTIONS

DO NOT LET PRODUCT ENTER DRAINS.

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. DISPOSE OF
PROPERLY. CLEAN UP AFFECTED AREA. AVOID
GENERATION OF DUSTS.

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. CHANGE CONTAMINATED CLOTHING. PREVENTIVE SKIN PROTECTION RECOMMENDED. WASH HANDS AFTER WORKING WITH SUBSTANCE. FOR PRECAUTIONS SEE SECTION 2.2.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

NO METAL OR LIGHT-WEIGHT-METAL CONTAINERS. TIGHTLY CLOSED. DRY. KEEP IN A WELL-VENTILATED PLACE. KEEP LOCKED UP OR IN AN AREA ACCESSIBLE ONLY TO QUALIFIED OR AUTHORIZED PERSONS.

Store at 5°C - 30°C

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
Manganese (II) chloride dihydrate	20603-88-7	C	5 MG/M3	USA. OCCUPATIONAL EXPOSURE LIMITS (OSHA) - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS
		TWA	0.1 MG/M3	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
	REMARKS	NOT CLASSIFIABLE AS A HUMAN CARCINOGEN		
		TWA	0.02 MG/M3	USA. ACGIH THRESHOLD LIMIT VALUES (TLV)
		NOT CLASSIFIABLE AS A HUMAN CARCINOGEN		
		C	5 MG/M3	USA. OSHA - TABLE Z-1 LIMITS FOR AIR CONTAMINANTS - 1910.1000
		TWA	1 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS

		ST	3 MG/M3	USA. NIOSH RECOMMENDED EXPOSURE LIMITS
		PEL	0.2 MG/M3	CALIFORNIA PERMISSIBLE EXPOSURE LIMITS FOR CHEMICAL CONTAMINANTS

EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS CHANGE CONTAMINATED CLOTHING. PREVENTIVE SKIN PROTECTION RECOMMENDED. WASH HANDS AFTER WORKING WITH SUBSTANCE.

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). TIGHTLY FITTING SAFETY GOGGLES

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.

BODY PROTECTION PROTECTIVE CLOTHING

RESPIRATORY PROTECTION REQUIRED WHEN DUSTS 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Rose color crystalline powder
ODOUR	ODORLESS
ODOUR THRESHOLD	NO DATA AVAILABLE
PH	5 - 6 AT 50 G/L AT 20 C

MELTING POINT/FREEZING POINT	650 °C
INITIAL BOILING POINT AND BOILING RANGE	1190 °C
FLASH POINT	
EVAPOURATION RATE	NO DATA AVAILABLE
FLAMMABILITY (SOLID, GAS)	NO DATA AVAILABLE
UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS	NO DATA AVAILABLE
VAPOUR PRESSURE	NO DATA AVAILABLE
VAPOUR DENSITY	NO DATA AVAILABLE
RELATIVE DENSITY	2.27
WATER SOLUBILITY	1,200 G/L AT 20 C
PARTITION COEFFICIENT: N- OCTANOL/WATER	NO DATA AVAILABLE
AUTO-IGNITION TEMPERATURE	NO DATA AVAILABLE
DECOMPOSITION TEMPERATURE	198 C - ELIMINATION OF WATER OF CRYSTALLIZATION
VISCOSITY	NO DATA AVAILABLE
EXPLOSIVE PROPERTIES	NO DATA AVAILABLE
OXIDIZING PROPERTIES	NO DATA AVAILABLE

OTHER SAFETY INFORMATION

BULK DENSITY CA.850 KG/M3

SECTION 10. STABILITY AND REACTIVITY

REACTIVITY	NO DATA AVAILABLE
CHEMICAL STABILITY	THE PRODUCT IS CHEMICALLY STABLE UNDER STANDARD AMBIENT CONDITIONS
POSSIBILITY OF HAZARDOUS REACTIONS	RISK OF EXPLOSION WITH: ALKALI METALS ZINC VIOLENT REACTIONS POSSIBLE WITH: ACIDS
CONDITIONS TO AVOID	NO DATA AVAILABLE
INCOMPATIBLE MATERIALS	LIGHT METALS, METALS

**HAZARDOUS
DECOMPOSITION
PRODUCTS**

IN THE EVENT OF FIRE: SEE SECTION 5

SECTION 11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE TOXICITY

LD50 ORAL - RAT - 250 MG/KG
REMARKS: (RTECS)
THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING
SUBSTANCES: MANGANESE(II) CHLORIDE

LD50 ORAL - RAT - FEMALE - 236 MG/KG
REMARKS: (ECHA)
THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING
SUBSTANCES: MANGANESE(II) CHLORIDE
SYMPTOMS: POSSIBLE DAMAGES: MUCOSAL IRRITATIONS

DERMAL: NO DATA AVAILABLE

NO DATA AVAILABLE

**SKIN
CORROSION/IRRITATION**

SKIN - RABBIT
RESULT: NO SKIN IRRITATION - 4 H
(OECD TEST GUIDELINE 404)
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE

**SERIOUS EYE
DAMAGE/EYE IRRITATION**

EYES - RABBIT
RESULT: CAUSES SERIOUS EYE DAMAGE.
(OECD TEST GUIDELINE 405)
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE

**RESPIRATORY OR SKIN
SENSITISATION**

LOCAL LYMPH NODE ASSAY (LLNA) - MOUSE
RESULT: NEGATIVE
(OECD TEST GUIDELINE 429)
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE

**GERM CELL
MUTAGENICITY**

TEST TYPE: MUTAGENICITY (MAMMAL CELL TEST):
CHROMOSOME ABERRATION.
TEST SYSTEM: HUMAN LYMPHOCYTES
METABOLIC ACTIVATION: WITH AND WITHOUT
METABOLIC ACTIVATION
METHOD: OECD TEST GUIDELINE 473
RESULT: NEGATIVE
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE
TEST TYPE: AMES TEST
TEST SYSTEM: ESCHERICHIA COLI/SALMONELLA
TYPHIMURIUM
METABOLIC ACTIVATION: WITH AND WITHOUT
METABOLIC ACTIVATION
METHOD: OECD TEST GUIDELINE 471
RESULT: NEGATIVE
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE
TEST TYPE: IN VITRO MAMMALIAN CELL GENE
MUTATION TEST
TEST SYSTEM: MOUSE LYMPHOMA TEST
METABOLIC ACTIVATION: WITH AND WITHOUT
METABOLIC ACTIVATION
METHOD: OECD TEST GUIDELINE 476
RESULT: NEGATIVE
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE
TEST TYPE: CHROMOSOME ABERRATION TEST
SPECIES: MOUSE

APPLICATION ROUTE: ORAL
METHOD: OECD TEST GUIDELINE 474
RESULT: NEGATIVE
REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE
FOLLOWING SUBSTANCES: MANGANESE(II) CHLORIDE

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	MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE. - BRAIN
ASPIRATION HAZARD	NO DATA AVAILABLE
ADDITIONAL INFORMATION	<p>RTECS: NOT AVAILABLE</p> <p>MANGANESE COMPOUNDS ARE GENERALLY ONLY VERY SLIGHTLY ABSORBABLE VIA THE GASTROINTESTINAL TRACT.</p> <p>AFTER ABSORPTION:</p> <p>WE HAVE NO DESCRIPTION OF ANY TOXIC SYMPTOMS.</p> <p>OTHER DANGEROUS PROPERTIES CAN NOT BE EXCLUDED.</p> <p>THIS SUBSTANCE SHOULD BE HANDLED WITH PARTICULAR CARE.</p>

SECTION 12. ECOLOGICAL INFORMATION

TOXICITY TOXICITY TO ALGAE	<p>STATIC TEST NOEC - DESMODESMUS SUBSPICATUS (GREEN ALGAE) - 1 MG/L - 72 H (OECD TEST GUIDELINE 201) REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: MANGANESE SULPHATE</p> <p>STATIC TEST ERC50 - DESMODESMUS SUBSPICATUS (GREEN ALGAE) - 61 MG/L - 72 H (OECD TEST GUIDELINE 201) REMARKS: THE VALUE IS GIVEN IN ANALOGY TO THE FOLLOWING SUBSTANCES: MANGANESE SULPHATE</p>
PERSISTENCE AND DEGRADABILITY	THE METHODS FOR DETERMINING THE BIOLOGICAL DEGRADABILITY ARE NOT APPLICABLE TO INORGANIC SUBSTANCES.
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 DISCHARGE INTO THE ENVIRONMENT MUST BE AVOIDED.

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.

CONTAMINATED PACKAGING DISPOSE OF AS UNUSED PRODUCT.

SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: TOXIC SOLID, INORGANIC, N.O.S. (Manganese (II) chloride dihydrate)

UN NUMBER: 3288

CLASS: 6.1

PACKING GROUP: III

REPORTABLE QUANTITY (RQ):

POISON INHALATION HAZARD: NO

IMDG

PROPER SHIPPING NAME: TOXIC SOLID, INORGANIC, N.O.S. (Manganese (II) chloride dihydrate)

UN NUMBER: 3288

CLASS: 6.1

PACKING GROUP: III

EMS-NO: F-A, S-A

MARINE POLLUTANT : YES

IATA

PROPER SHIPPING NAME: TOXIC SOLID, INORGANIC, N.O.S. (Manganese (II) chloride dihydrate)

UN NUMBER: 3288

CLASS: 6.1

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
Manganese (II) chloride dihydrate	20603-88-7	07-08-2015

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

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

SECTION 16. OTHER INFORMATION

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

H301	TOXIC IF SWALLOWED.
H318	CAUSES SERIOUS EYE DAMAGE.
H373	MAY CAUSE DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.
H402	HARMFUL TO AQUATIC LIFE
H411	TOXIC TO AQUATIC LIFE WITH LONG LASTING EFFECTS

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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