

## SAFETY DATA SHEET

## SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 378516

NAME: *N*-Vinyl-2-pyrrolidone

Stabililzed with hydroquinone methyl ether

SYNONYMS: 1-Vinyl-2-pyrrolidinone

1-Vinylpyrrolidin-2-one

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

+1 888-535-2444

SERVICE:

# SECTION 2. HAZARDS IDENTIFICATION

# CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

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

ACUTE TOXICITY, ORAL (CATEGORY 4), H302

ACUTE TOXICITY, INHALATION (CATEGORY 4), H332

ACUTE TOXICITY, DERMAL (CATEGORY 3), H311

SERIOUS EYE DAMAGE (CATEGORY 1), H318

CARCINOGENICITY (CATEGORY 2), H351

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 2), H371

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (CATEGORY 3),

RESPIRATORY SYSTEM, H335

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)** 

H302 + H332 HARMFUL IF SWALLOWED OR IF INHALED

H311 TOXIC IN CONTACT WITH SKIN. H318 CAUSES SERIOUS EYE DAMAGE.

H335 MAY CAUSE RESPIRATORY IRRITATION.

H351 SUSPECTED OF CAUSING CANCER. H371 MAY CAUSE DAMAGE TO ORGANS.

PRECAUTIONARY STATEMENT(S)

P201 OBTAIN SPECIAL INSTRUCTIONS BEFORE USE.

P202 DO NOT HANDLE UNTIL ALL SAFETY PRECAUTIONS HAVE

BEEN READ AND UNDERSTOOD.

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.
P271 USE ONLY OUTDOORS OR IN A WELL-VENTILATED AREA.
P280 WEAR PROTECTIVE GLOVES/ EYE PROTECTION/ FACE

PROTECTION.

P301 + P312 IF SWALLOWED: CALL A POISON CENTER OR DOCTOR/

PHYSICIAN IF YOU FEEL UNWELL.

P302 + P352 IF ON SKIN: WASH WITH PLENTY OF SOAP AND WATER. P304 + P340 IF INHALED: REMOVE VICTIM TO FRESH AIR AND KEEP AT

REST IN A POSITION COMFORTABLE FOR BREATHING.

P305 + P351 + P338 IF IN EYES: RINSE CAUTIOUSLY WITH WATER FOR SEVERAL

MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND EASY

TO DO. CONTINUE RINSING.

P309 + P311 IF EXPOSED OR IF YOU FEEL UNWELL: CALL A POISON

CENTER OR DOCTOR/PHYSICIAN.

P310 IMMEDIATELY CALL A POISON CENTER OR DOCTOR/

PHYSICIAN.

P322 SPECIFIC MEASURES (SEE SUPPLEMENTAL FIRST AID

INSTRUCTIONS ON THIS LABEL).

P330 RINSE MOUTH.

P361 REMOVE/TAKE OFF IMMEDIATELY ALL CONTAMINATED

CLOTHING.

P363 WASH CONTAMINATED CLOTHING BEFORE REUSE.

P403 + P233 STORE IN A WELL-VENTILATED PLACE. KEEP CONTAINER

TIGHTLY CLOSED.

P405 STORE LOCKED UP.

P501 DISPOSE OF CONTENTS/ CONTAINER TO AN APPROVED

WASTE DISPOSAL PLANT.

HAZARDS NOT NONE

**OTHERWISE** 

CLASSIFIED (HNOC) OR NOT COVERED

**BY GHS** 

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

MF:  $C_6H_9NO$ 

MW: 111.14

CAS-NO. 88-12-0

PURITY:  $\geq 99\%$  (GC)

#### **HAZARDOUS COMPONENTS**

COMPONENT	CLASSIFICATION	CONCENTRATION			
1-VINYL-2-PYRROLIDONE					
	ACUTE TOX. 4; ACUTE TOX. 3;	-			
	EYE DAM. 1; CARC. 2; STOT SE				
	2; STOT SE 3; H302 + H332,				
	H311, H318, H335, H351, H371				

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. TAKE

VICTIM IMMEDIATELY TO HOSPITAL, CONSULT A

PHYSICIAN.

IN CASE OF EYE

**CONTACT** 

RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT

LEAST 15 MINUTES AND CONSULT A PHYSICIAN.

**IF SWALLOWED** 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 USE WATER SPRAY, ALCOHOL-RESISTANT FOAM, DRY

**EXTINGUISHING MEDIA** CHEMICAL OR CARBON DIOXIDE.

**SPECIAL HAZARDS** ARISING FROM THE SUBSTANCE OR MIXTURE CARBON OXIDES, NITROGEN OXIDES (NOX)

**ADVICE FOR FIREFIGHTERS**  WEAR SELF CONTAINED BREATHING APPARATUS FOR

FIRE FIGHTING IF NECESSARY.

**FURTHER INFORMATION** NO DATA AVAILABLE

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

**PERSONAL** PRECAUTIONS, **PROTECTIVE EQUIPMENT AND**  WEAR RESPIRATORY PROTECTION. AVOID BREATHING

VAPOURS, MIST OR GAS. ENSURE ADEQUATE

VENTILATION. EVACUATE PERSONNEL TO SAFE AREAS.

FOR PERSONAL PROTECTION SEE SECTION 8.

**ENVIRONMENTAL PRECAUTIONS** 

**EMERGENCY PROCEDURES** 

PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE TO

DO SO. DO NOT LET PRODUCT ENTER DRAINS.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP** 

SOAK UP WITH INERT ABSORBENT MATERIAL AND DISPOSE OF AS HAZARDOUS WASTE. 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 CONTACT WITH SKIN AND EYES. AVOID

INHALATION OF VAPOUR OR MIST.

FOR PRECAUTIONS SEE SECTION 2.2.

**CONDITIONS FOR SAFE** STORAGE, INCLUDING

ANY

KEEP CONTAINER TIGHTLY CLOSED IN A DRY AND WELL-VENTILATED PLACE. CONTAINERS WHICH ARE

OPENED MUST BE CAREFULLY RESEALED AND KEPT

UPRIGHT TO PREVENT LEAKAGE.

**SPECIFIC END USE(S)** 

**INCOMPATIBILITIES** 

APART FROM THE USES MENTIONED IN SECTION 1.2 NO

OTHER SPECIFIC USES ARE STIPULATED

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

CONTROL PARAMETERS

#### COMPONENTS WITH WORKPLACE CONTROL PARAMETERS

COMPONENT	CAS-NO.	VALUE	CONTROL	BASIS
			PARAMETERS	
1-VINYL-2-	88-12-0	TWA	0.05 PPM	USA. ACGIH
PYRROLIDONE				THRESHOLD
				LIMIT VALUES
				(TLV)
	REMARKS	LIVER DAMAC	GE	
		CONFIRMED ANIMAL CARCINOGEN WITH UNKNOWN		
		RELEVANCE TO HUMANS		

#### **EXPOSURE CONTROLS**

APPROPRIATE AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WASH

**ENGINEERING** HANDS BEFORE BREAKS AND IMMEDIATELY AFTER

**CONTROLS** HANDLING THE PRODUCT.

### PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION TIGHTLY FITTING SAFETY GOGGLES. FACESHIELD (8-INCH

MINIMUM). 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.

**FULL CONTACT** 

MATERIAL: BUTYL-RUBBER

MINIMUM LAYER THICKNESS: 0.3 MM

**BREAK THROUGH TIME: 480 MIN** 

MATERIAL TESTED:BUTOJECT (KCL 897, SIZE M)

SPLASH CONTACT

MATERIAL: NITRILE RUBBER

MINIMUM LAYER THICKNESS: 0.11 MM

**BREAK THROUGH TIME: 30 MIN** 

MATERIAL TESTED: DERMATRIL (KCL 740, 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

TROWEN 5/4, CONTACT THE SOTT LIER 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

SI ECITIC SITUATION OF ANTICITATED USE DI OUR

CUSTOMERS. IT SHOULD NOT BE CONSTRUED AS OFFERING AN APPROVAL FOR ANY SPECIFIC USE SCENARIO.

**BODY PROTECTION** COMPLETE SUIT PROTECTING AGAINST CHEMICALS, 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 FULL-FACE

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 Colorless to light yellow liquid
ODOUR NO DATA AVAILABLE
ODOUR THRESHOLD NO DATA AVAILABLE
PH NO DATA AVAILABLE

**MELTING** 

POINT/FREEZING POINT INITIAL BOILING POINT AND BOILING RANGE

FLASH POINT

EVAPORATION RATE NO DATA AVAILABLE FLAMMABILITY (SOLID, NO DATA AVAILABLE

GAS)

UPPER/LOWER UPPER EXPLOSION LIMIT: 10 %(V) FLAMMABILITY OR LOWER EXPLOSION LIMIT: 1.4 %(V)

**EXPLOSIVE LIMITS** 

VAPOUR PRESSURE NO DATA AVAILABLE

VAPOUR DENSITY 3.84 - (AIR = 1.0)RELATIVE DENSITY 1.03-1.04 g/mL

WATER SOLUBILITY NO DATA AVAILABLE PARTITION COEFFICIENT: NO DATA AVAILABLE

N- OCTANOL/WATER

AUTO-IGNITION NO DATA AVAILABLE

TEMPERATURE

DECOMPOSITION NO DATA AVAILABLE

**TEMPERATURE** 

VISCOSITY NO DATA AVAILABLE EXPLOSIVE PROPERTIES NO DATA AVAILABLE OXIDIZING PROPERTIES NO DATA AVAILABLE

#### OTHER SAFETY INFORMATION

#### **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** NO DATA AVAILABLE

INCOMPATIBLE MATERIALS

STRONG OXIDIZING AGENTS

HAZARDOUS OTHER DECOMPOSITION PRODUCTS - NO DATA

**DECOMPOSITION** AVAILABLE

**PRODUCTS** IN THE EVENT OF FIRE: SEE SECTION 5

## SECTION 11. TOXICOLOGICAL INFORMATION

### INFORMATION ON TOXICOLOGICAL EFFECTS

**ACUTE TOXICITY** LD50 ORAL - RAT - 1,470 MG/KG

INHALATION: NO DATA AVAILABLE LD50 DERMAL - RABBIT - 560 MG/KG

**SKIN** NO DATA AVAILABLE

**CORROSION/IRRITATION** 

**SERIOUS EYE** EYES - RABBIT

**DAMAGE/EYE IRRITATION** RESULT: SEVERE EYE IRRITATION

**RESPIRATORY OR SKIN** 

**SENSITISATION** 

NO DATA AVAILABLE

GERM CELL

**MUTAGENICITY** 

NO DATA AVAILABLE

**CARCINOGENICITY** CARCINOGENICITY - RAT - INHALATION

TUMORIGENIC:CARCINOGENIC BY RTECS CRITERIA.
SENSE ORGANS AND SPECIAL SENSES (NOSE, EYE, EAR,
AND TASTE):OLFACTION:TUMORS. LIVER:TUMORS.
THIS PRODUCT IS OR CONTAINS A COMPONENT THAT
HAS BEEN REPORTED TO BE POSSIBLY CARCINOGENIC

BASED ON ITS IARC, ACGIH, NTP, OR EPA

CLASSIFICATION.

LIMITED EVIDENCE OF CARCINOGENICITY IN ANIMAL

**STUDIES** 

3 - GROUP 3: NOT CLASSIFIABLE AS TO ITS IARC:

CARCINOGENICITY TO HUMANS (1-VINYL-2-

PYRROLIDONE)

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS NTP:

GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A

KNOWN OR ANTICIPATED CARCINOGEN BY NTP.

NO COMPONENT OF THIS PRODUCT PRESENT AT LEVELS OSHA:

> GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL CARCINOGEN BY OSHA.

REPRODUCTIVE TOXICITY NO DATA AVAILABLE

**SPECIFIC TARGET ORGAN** 

**TOXICITY - SINGLE** 

**EXPOSURE** 

MAY CAUSE DAMAGE TO ORGANS. MAY CAUSE

RESPIRATORY IRRITATION.

**SPECIFIC TARGET ORGAN** 

**TOXICITY - REPEATED** 

**EXPOSURE** 

NO DATA AVAILABLE

**ASPIRATION HAZARD** NO DATA AVAILABLE

**ADDITIONAL** RTECS: UY6107000

**INFORMATION** TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL,

PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE

NOT BEEN THOROUGHLY INVESTIGATED.

STOMACH - IRREGULARITIES - BASED ON HUMAN

**EVIDENCE** 

#### **SECTION 12. ECOLOGICAL INFORMATION**

**TOXICITY** NO DATA AVAILABLE

PERSISTENCE AND

**DEGRADABILITY** 

NO DATA AVAILABLE

**BIOACCUMULATIVE** 

**POTENTIAL** 

NO DATA AVAILABLE

**MOBILITY IN SOIL** NO DATA AVAILABLE **RESULTS OF PBT AND** PBT/VPVB ASSESSMENT NOT AVAILABLE AS CHEMICAL

VPVB ASSESSMENT SAFETY ASSESSMENT NOT REQUIRED/NOT

**CONDUCTED** 

OTHER ADVERSE EFFECTS NO DATA AVAILABLE

#### SECTION 13. DISPOSAL CONSIDERATIONS

#### WASTE TREATMENT METHODS

**PRODUCT** OFFER SURPLUS AND NON-RECYCLABLE SOLUTIONS TO

A LICENSED DISPOSAL COMPANY. CONTACT A

LICENSED PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE OF THIS MATERIAL. DISSOLVE OR MIX THE MATERIAL WITH A COMBUSTIBLE SOLVENT AND BURN THE ACHEMICAL DISCOURT AND BURN

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: TOXIC, LIQUIDS, ORGANIC, N.O.S.(N-Vinyl-2-pyrrolidone

Stabililzed with hydroquinone methyl ether)

UN NUMBER: 2810 CLASS: 6.1 PACKING GROUP: III

REPORTABLE QUANTITY

(RQ):

MARINE POLLUTANT: NO POISON INHALATION NO

HAZARD:

**IMDG** 

PROPER SHIPPING NAME: TOXIC LIQUID, ORGANIC, N.O.S.(N-Vinyl-2-pyrrolidone

Stabililzed with hydroquinone methyl ether)

UN NUMBER: 2810 CLASS: 6.1 PACKING GROUP: III EMS-NO: F-A.

EMS-NO: F-A, S-A MARINE POLLUTANT: NO

**IATA** 

PROPER SHIPPING NAME: TOXIC LIQUID, ORGANIC, N.O.S.(N-Vinyl-2-pyrrolidone

Stabililzed with hydroquinone methyl ether)

UN NUMBER: 2810 CLASS: 6.1 PACKING GROUP: III

## **SECTION 15. REGULATORY INFORMATION**

**SARA 302 COMPONENTS** SARA 302: NO CHEMICALS IN THIS MATERIAL ARE

SUBJECT TO THE REPORTING REQUIREMENTS OF SARA

TITLE III, SECTION 302.

**SARA 313 COMPONENTS** SARA 313: 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 ACUTE HEALTH HAZARD, CHRONIC HEALTH HAZARD

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

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

*N*-Vinyl-2-pyrrolidone 88-12-0 3/1/2007

Stabilized with hydroquinone

methyl ether

NEW JERSEY RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

*N*-Vinyl-2-pyrrolidone 88-12-0 3/1/2007

Stabilized with hydroquinone

methyl ether

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.

ACUTE TOX.

CARC.

CARCINOGENICITY

EYE DAM.

SERIOUS EYE DAMAGE

HARMFUL IF SWALLOWED.

H302 + H332 HARMFUL IF SWALLOWED OR IF INHALED

H311 TOXIC IN CONTACT WITH SKIN. H318 CAUSES SERIOUS EYE DAMAGE.

H332 HARMFUL IF INHALED.

H335 MAY CAUSE RESPIRATORY IRRITATION.

H351 SUSPECTED OF CAUSING CANCER. H371 MAY CAUSE DAMAGE TO ORGANS.

**HMIS RATING** 

HEALTH HAZARD: 2 CHRONIC HEALTH \*

HAZARD:

FLAMMABILITY: 0 PHYSICAL HAZARD 0

NFPA RATING

HEALTH HAZARD: 2 FIRE HAZARD: 0 REACTIVITY HAZARD: 0

**MSDS LEGEND** 

MW: MOLECULAR WEIGHT MF: MOLECULAR FORMULA

VOC: VOLATILE ORGANIC COMPOUNDS

ACGIH: AMERICAN CONFERENCE OF GOVERNMENENTAL 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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