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## SAFETY DATA SHEET

#### SECTION 1. CHEMICAL IDENTIFICATION

CATALOG #: 36394

NAME: Isovaleric acid

SYNONYMS: 3-Methylbutanoic acid

3-Methylbutyric acid

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) FLAMMABLE LIQUIDS (CATEGORY 4), H227 SKIN CORROSION (CATEGORY 1B), H314

SERIOUS EYE DAMAGE (CATEGORY 1), H318

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)

H227 COMBUSTIBLE LIQUID.

H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

H318 CAUSES SERIOUS EYE DAMAGE.

PRECAUTIONARY STATEMENT(S)

P210 KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT

SURFACES. NO SMOKING.

P264 WASH SKIN THOROUGHLY AFTER HANDLING.

P280 WEAR PROTECTIVE GLOVES/ PROTECTIVE CLOTHING/ EYE

PROTECTION/ FACE PROTECTION.

P301 + P330 + P331 IF SWALLOWED: RINSE MOUTH. DO NOT INDUCE

VOMITING.

P303 + P361 + P353 IF ON SKIN (OR HAIR): REMOVE/ TAKE OFF IMMEDIATELY

ALL CONTAMINATED CLOTHING. RINSE SKIN WITH WATER/

SHOWER.

P304 + P340 + P310 IF INHALED: REMOVE PERSON TO FRESH AIR AND KEEP

COMFORTABLE FOR BREATHING. IMMEDIATELY CALL A

POISON CENTER/DOCTOR.

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

P310 MINUTES. REMOVE CONTACT LENSES, IF PRESENT AND

EASY TO DO. CONTINUE RINSING. IMMEDIATELY CALL A

POISON CENTER/DOCTOR.

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 NONE

**OTHERWISE** 

CLASSIFIED (HNOC) OR NOT COVERED

BY GHS

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

MF:  $C_5H_{10}O_2$ 

MW: 102.13

CAS-NO. 503-74-2

PURITY: 98.5 - 101.5% (Assay by titration)

#### **HAZARDOUS COMPONENTS**

| COMPONENT       | CLASSIFICATION               | CONCENTRATION |
|-----------------|------------------------------|---------------|
| Isovaleric acid |                              |               |
|                 | FLAM. LIQ. 4; SKIN CORR. 1B; | <= 100 %      |
|                 | EYE DAM. 1; AQUATIC ACUTE    |               |
|                 | 3; H227, H314, H318, H402    |               |

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

TAKE OFF CONTAMINATED CLOTHING AND SHOES IMMEDIATELY. WASH OFF WITH SOAP AND PLENTY OF

WATER. CONSULT A PHYSICIAN.

IN CASE OF EYE

**CONTACT** 

RINSE THOROUGHLY WITH PLENTY OF WATER FOR AT

LEAST 15 MINUTES AND CONSULT A PHYSICIAN. CONTINUE RINSING EYES DURING TRANSPORT TO

HOSPITAL.

**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 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** CARBON OXIDES

ARISING FROM THE

SUBSTANCE OR MIXTURE

ADVICE FOR WEAR SELF CONTAINED BREATHING APPARATUS FOR

**FIREFIGHTERS** FIRE FIGHTING IF NECESSARY.

FURTHER INFORMATION USE WATER SPRAY TO COOL UNOPENED CONTAINERS.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL** USE PERSONAL PROTECTIVE EQUIPMENT. AVOID **PRECAUTIONS,** BREATHING VAPORS, MIST OR GAS. ENSURE

PROTECTIVE ADEQUATE VENTILATION. REMOVE ALL SOURCES OF EQUIPMENT AND IGNITION. EVACUATE PERSONNEL TO SAFE AREAS.

EMERGENCY BEWARE OF VAPORS ACCUMULATING TO FORM EXPLOSIVE CONCENTRATIONS. VAPORS CAN

ACCUMULATE IN LOW AREAS.

FOR PERSONAL PROTECTION SEE SECTION 8

ENVIRONMENTAL PREVENT FURTHER LEAKAGE OR SPILLAGE IF SAFE

**PRECAUTIONS** TO DO SO. DO NOT LET PRODUCT ENTER DRAINS.

METHODS ANDCONTAIN SPILLAGE, AND THEN COLLECT WITH ANMATERIALS FORELECTRICALLY PROTECTED VACUUM CLEANER OR BYCONTAINMENT ANDWET BRUSHING AND PLACE IN CONTAINER FOR

CLEANING UP DISPOSAL ACCORDING TO LOCAL REGULATIONS (SEE

SECTION 13). KEEP IN SUITABLE, CLOSED CONTAINERS

FOR DISPOSAL.

**REFERENCE TO OTHER** FOR DISPOSAL SEE SECTION 13.

SECTIONS

#### SECTION 7. HANDLING AND STORAGE

**PRECAUTIONS FOR SAFE** AVOID INHALATION OF VAPOR OR MIST.

**HANDLING** 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. CONTAINERS WHICH ARE OPENED MUST BE CAREFULLY RESEALED AND KEPT

UPRIGHT TO PREVENT LEAKAGE.

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

CONTAINS NO SUBSTANCES WITH OCCUPATIONAL EXPOSURE LIMIT VALUES.

#### **EXPOSURE CONTROLS**

APPROPRIATEHANDLE IN ACCORDANCE WITH GOOD INDUSTRIALENGINEERINGHYGIENE AND SAFETY PRACTICE. WASH HANDS BEFORE

**CONTROLS** BREAKS AND AT THE END OF WORKDAY.

## PERSONAL PROTECTIVE EQUIPMENT

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

**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** WHERE RISK ASSESSMENT SHOWS AIR-PURIFYING **PROTECTION** RESPIRATORS ARE APPROPRIATE USE A FULL FACE

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 liquid

ODOUR NO DATA AVAILABLE
ODOUR THRESHOLD NO DATA AVAILABLE
PH NO DATA AVAILABLE

MELTING -29 °C

POINT/FREEZING POINT

INITIAL BOILING POINT 175 - 177 °C

AND BOILING RANGE

FLASH POINT 74 °C

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

GAS)

UPPER/LOWER NO DATA AVAILABLE

FLAMMABILITY OR EXPLOSIVE LIMITS

VAPOUR PRESSURE 0.507 HPA AT 20 C VAPOUR DENSITY NO DATA AVAILABLE

RELATIVE DENSITY 0.93

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

NO DATA AVAILABLE

## 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

BASES, OXIDIZING AGENTS, REDUCING AGENTS

HAZARDOUS DECOMPOSITION PRODUCTS HAZARDOUS DECOMPOSITION PRODUCTS FORMED UNDER FIRE CONDITIONS. - CARBON 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 - 2,500 MG/KG

LD50 ORAL - RAT - > 2,000 MG/KG

LC0 INHALATION - RAT - 4 H - 2.48 MG/L INHALATION : MATERIAL IS EXTREMELY

DESTRUCTIVE TO THE TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT.

CORROSIVE TO RESPIRATORY SYSTEM.

DERMAL: NO DATA AVAILABLE

NO DATA AVAILABLE

SKIN - RABBIT

**CORROSION/IRRITATION** RESULT: CORROSIVE - 3 MIN - 1 H

**SERIOUS EYE** CAUSES SERIOUS EYE DAMAGE. RISK OF

**DAMAGE/EYE IRRITATION** BLINDNESS!

RESPIRATORY OR SKIN SENSITISATION

NO DATA AVAILABLE

**GERM CELL** OECD TEST GUIDELINE 474

MUTAGENICITY MOUSE - MALE AND FEMALE - RED BLOOD CELLS

(ERYTHROCYTES) RESULT: NEGATIVE

(IN ANALOGY TO SIMILAR PRODUCTS)

**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.

ACGIH: NO COMPONENT OF THIS PRODUCT PRESENT AT

LEVELS GREATER THAN OR EQUAL TO 0.1% IS IDENTIFIED AS A CARCINOGEN OR POTENTIAL

CARCINOGEN BY ACGIH.

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** 

ACUTE ORAL TOXICITY - IF INGESTED, SEVERE BURNS OF THE MOUTH AND THROAT, AS WELL AS A DANGER OF PERFORATION OF THE OESOPHAGUS

AND THE STOMACH.

ACUTE INHALATION TOXICITY - MUCOSAL IRRITATIONS, COUGH, SHORTNESS OF BREATH, POSSIBLE DAMAGES:, DAMAGE OF RESPIRATORY

TRACT.

SPECIFIC TARGET ORGAN

TOXICITY - REPEATED

**EXPOSURE** 

NO DATA AVAILABLE

**ASPIRATION HAZARD** NO DATA AVAILABLE

# ADDITIONAL INFORMATION

REPEATED DOSE TOXICITY - RAT - MALE - ORAL - NO OBSERVED ADVERSE EFFECT LEVEL - 4,100 MG/KG (IN ANALOGY TO SIMILAR PRODUCTS)

RTECS: NY1400000

MATERIAL IS EXTREMELY DESTRUCTIVE TO TISSUE OF THE MUCOUS MEMBRANES AND UPPER RESPIRATORY TRACT, EYES, AND SKIN. INHALATION MAY PROVOKE THE FOLLOWING SYMPTOMS: SPASM, INFLAMMATION AND EDEMA OF THE BRONCHI, SPASM, INFLAMMATION AND EDEMA OF THE LARYNX, PNEUMONITIS, PULMONARY EDEMA, SYMPTOMS AND SIGNS OF POISONING ARE: BURNING SENSATION, COUGH, WHEEZING, LARYNGITIS, SHORTNESS OF BREATH, HEADACHE, NAUSEA, VOMITING TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

OTHER DANGEROUS PROPERTIES CAN NOT BE EXCLUDED.

HANDLE IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICE.

## SECTION 12. ECOLOGICAL INFORMATION

## **TOXICITY**

TOXICITY TO FISH STATIC TEST LC50 - PIMEPHALES PROMELAS

(FATHEAD MINNOW) - 77 MG/L - 96 H

REMARKS: (IN ANALOGY TO SIMILAR PRODUCTS)

TOXICITY TO DAPHNIA AND

OTHER AQUATIC INVERTEBRATES

STATIC TEST EC50 - DAPHNIA MAGNA (WATER FLEA) -

51.25 MG/L - 48 H

REMARKS: (IN ANALOGY TO SIMILAR PRODUCTS)

TOXICITY TO ALGAE STATIC TEST ERC50 - PSEUDOKIRCHNERIELLA

SUBCAPITATA - 29.3 MG/L - 72 H

REMARKS: (IN ANALOGY TO SIMILAR PRODUCTS)

STATIC TEST NOEC - PSEUDOKIRCHNERIELLA

SUBCAPITATA - 6.38 MG/L - 72 H

REMARKS: (IN ANALOGY TO SIMILAR PRODUCTS)

TOXICITY TO BACTERIA STATIC TEST IC50 - TETRAHYMENA PYRIFORMIS - 224

MG/L - 40 H

REMARKS: (ECHA)

FERMENTATION TUBE TEST ECO - ACTIVATED

SLUDGE - > 1,000 MG/L

REMARKS: (EXTERNAL MSDS)

#### PERSISTENCE AND DEGRADABILITY

BIODEGRADABILITY AEROBIC - EXPOSURE TIME 10 D

RESULT: 58 - 66 % - READILY BIODEGRADABLE.

BIOACCUMULATIVE

VPVB ASSESSMENT

**POTENTIAL** 

NO DATA AVAILABLE

MOBILITY IN SOIL NO DATA AVAILABLE

**RESULTS OF PBT AND**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 THIS COMBUSTIBLE MATERIAL MAY BE BURNED IN A

CHEMICAL INCINERATOR EQUIPPED WITH AN

AFTERBURNER AND SCRUBBER. OFFER SURPLUS AND

NON-RECYCLABLE SOLUTIONS TO A LICENSED DISPOSAL COMPANY. CONTACT A LICENSED

PROFESSIONAL WASTE DISPOSAL SERVICE TO DISPOSE

OF THIS MATERIAL.

CONTAMINATED

**PACKAGING** 

DISPOSE OF AS UNUSED PRODUCT.

# SECTION 14. TRANSPORT INFORMATION

DOT (US)

PROPER SHIPPING NAME: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

(Isovaleric acid)

UN NUMBER: 3265 CLASS: 8 PACKING GROUP: II

REPORTABLE QUANTITY

(RQ):

POISON INHALATION NO

HAZARD:

**IMDG** 

PROPER SHIPPING NAME: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

(Isovaleric acid)

UN NUMBER: 3265 CLASS: 8 PACKING GROUP: II

EMS-NO: F-A, S-B

**IATA** 

PROPER SHIPPING NAME: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.

(Isovaleric acid)

UN NUMBER: 3265 CLASS: 8 PACKING GROUP: II

## SECTION 15. REGULATORY INFORMATION

SARA 302 COMPONENTS NO 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, ACUTE HEALTH HAZARD

MASSACHUSETTS RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

Isovaleric acid 503-74-2

PENNSYLVANIA RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

Isovaleric acid 503-74-2

NEW JERSEY RIGHT TO KNOW COMPONENTS

CAS-NO. REVISION DATE

Isovaleric acid 503-74-2

**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.

H314 CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

H318 CAUSES SERIOUS EYE DAMAGE.

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)

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