

MATERIAL SAFETY DATA SHEET (MSDS)

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EM SCIENCE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Manufacturer.....:

EM SCIENCE

A Division of EM Industries

P.O. Box 70

480 Democrat Road

Gibbstown, N.J. 08027

Preparation Date.: 6/6/97

Information Phone Number.: 856-423-6300

Hours: Mon. to Fri. 8:30-5

Chemtrec Emergency Number: 800-424-9300

Hours: 24 hrs a day

Catalog Number(s):

0138658D BX1670 BX1673 MX1034

Product Name:

2-Butanone

Synonyms:

Methyl Ethyl Ketone

Chemical Family:

Ketone

Formula:

$\text{CH}_3\text{COCH}_2\text{CH}_3$

Molecular Weight.:

72.11

2. COMPOSITION / INFORMATION ON INGREDIENTS

| Component | CAS # | Appr % |
|------------|---------|--------|
| 2-Butanone | 78-93-3 | 100% |

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

FLAMMABLE LIQUID AND VAPOR.

Vapor Irritating To Eyes And Respiratory Passages.

Liquid Irritating To Eyes.

MAY CAUSE EYE INJURY.

MAY CAUSE SKIN IRRITATION.

May Cause Damage To Lungs And Central Nervous System.

Appearance:

Colorless liquid, sharp, mint-like odor

POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)**Symptoms of Exposure:**

Vapor irritating to eyes and respiratory passages. Liquid irritating to eyes; may cause eye injury. Prolonged or repeated skin contact may cause irritation. Inhalation of high concentrations may cause headache, dizziness, nausea, narcosis, lung damage. Prolonged exposure may produce central nervous system depression and narcosis.

Medical Cond. Aggravated by Exposure:

Respiratory conditions

Routes of Entry:

Inhalation, ingestion

Carcinogenicity:

The material is not listed (IARC, NTP, OSHA) as cancer causing agent.

4. FIRST AID MEASURES

Emergency First Aid:

SEEK MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.

Skin: Wash thoroughly with soap and water.

Eyes: Immediately flush thoroughly with water for at least 15 minutes.

Inhalation: Remove to fresh air; give artificial respiration if breathing has stopped.

Ingestion: Do not induce vomiting; get immediate medical attention.

5. FIRE FIGHTING MEASURES

Flash Point (F): 21F (tcc)

Flammable Limits LEL (%): 1.80

Flammable Limits UEL (%): 11.50

Extinguishing Media:

Water spray, "alcohol" foam, dry chemical, CO₂

Fire Fighting Procedures:

Wear self-contained breathing apparatus.

Fire & Explosion Hazards:

Vapor can travel distances to ignition source and flash back.

6. ACCIDENTAL RELEASE MEASURES

Spill Response:

Evacuate the area of all unnecessary personnel. Wear suitable protective equipment listed under Exposure / Personal Protection. Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards. Contain the release and eliminate its source, if this can be done without risk. Take up and containerize for proper disposal as described under Disposal. Comply with Federal, State, and local regulations on reporting releases. Refer to Regulatory Information for reportable quantity and other regulatory data.

EM SCIENCE recommends Spill-X absorbent agents for various types of spills. Additional information on the Spill-X products can be provided through the EM SCIENCE Technical Service Department (609) 423-6300. The following EM SCIENCE Spill-X absorbent is recommended for this product:

SX0863 Solvent Spill Treatment Kit

7. HANDLING AND STORAGE

Handling & Storage:

Keep container tightly closed. Store in a cool area away from ignition sources and oxidizers. Electrically ground all equipment when handling this product. Do not breathe vapor. Do not get in eyes, on skin, or on clothing. Retained residue may make empty containers hazardous; use caution!

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

Ventilation, Respiratory Protection, Protective Clothing, Eye Protection:

Material should be handled or transferred in an approved fume hood or with adequate ventilation. Protective gloves (Butyl rubber, Polyurethane or equivalent) should be worn to prevent skin contact. Safety glasses with side shields must be worn at all times.

Work/Hygenic Practices:

Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available.

EXPOSURE GUIDELINES

OSHA - PEL:

| Component | TWA | | STEL | | CL | | Skin |
|------------|-----|-------|------|-------|-----|-------|------|
| | PPM | MG/M3 | PPM | MG/M3 | PPM | MG/M3 | |
| 2-Butanone | 200 | 590 | 300 | 885 | | | |

ACGIH - TLV:

| Component | TWA | | STEL | | CL | | Skin |
|------------|-----|-------|------|-------|-----|-------|------|
| | PPM | MG/M3 | PPM | MG/M3 | PPM | MG/M3 | |
| 2-Butanone | 200 | 590 | 300 | 885 | | | |

If there are no exposure limit numbers listed in the Exposure Guidelines chart, this indicates that no OSHA or ACGIH exposure limits have been established.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (C 760 mmHg) : 80C

Melting Point (C) : -86C

Specific Gravity ($H_2O = 1$) : 0.805

Vapor Pressure (mm Hg) : 75 20C

Percent Volatile by vol (%) : 99+%

Vapor Density (Air = 1) : 2.5

Evaporation Rate (BuAc = 1) : 3.8

Solubility in Water (%) : 27%

Appearance :

Colorless liquid, sharp, mint-like odor

10. STABILITY AND REACTIVITY

Stability: Yes

Hazardous Polymerization:

Does not occur

Hazardous Decomposition:

CO_x peroxides

Conditions to Avoid:

Heat; contact with ignition source

Materials To Avoid:

() Water

(X) Acids

(X) Bases

() Corrosives

(X) Oxidizers

(X) Other: Potassium t-butoxide, alkaline materials,

halogens, hydrogen peroxide and nitric acid, haloforms

and strong bases, 2-Propanol

11. TOXICOLOGICAL INFORMATION

Toxicity Data

orl-rat LD50: 2737 mg/kg skn-rbt LD50: 6480 mg/kg

ihl-mus LC50: 40 g/cu.m./2H

Toxicological Findings:

Laboratory rats exposed by inhalation to over 1000 ppm for most of their pregnancy period exhibited minor embryotoxic/fetotoxic

effects.

Tests on laboratory animals indicate material may produce adverse mutagenic effects.

Cited in Registry of Toxic Effects of Chemical Substances (RTECS)

12. DISPOSAL CONSIDERATIONS

EPA Waste Numbers: U159 D001 D035

Treatment:

Specified Technology - Incineration or fuels blending to less than the TCLP standard. Contact your local permitted waste disposal site (TSD) for permissible treatment sites.

ALWAYS CONTACT A PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

13. TRANSPORT INFORMATION

DOT Proper Shipping Name:

Methyl Ethyl Ketone (for BX1670, BX1673, MX1034)

Ethyl Methyl Ketone (for 0138658D)

DOT ID Number :

UN1193

14. REGULATORY INFORMATION

TSCA Statement:

The CAS number of this product is listed on the TSCA Inventory.

| Component | SARA EHS (302) | SARA EHS TPQ (lbs) | CERCLA RQ (lbs) |
|------------|----------------------|--------------------------|-----------------------|
| 2-Butanone | | | 5000 |

| Component | OSHA Floor List | SARA 313 | DeMinimis for SARA 313 (%) |
|------------|--------------------|-------------|----------------------------------|
| 2-Butanone | Y | Y | 1.0 |

If there is no information listed on the regulatory information chart, this indicates that the chemical is not covered by the specific regulation listed.

15. OTHER INFORMATION

Comments:

None

NFPA Hazard Ratings:

Health : 1
Flammability : 3
Reactivity : 0
Special Hazards :

Revision History: 11/1/81 10/1/83 5/6/86 6/30/87
10/27/87 1/8/88 5/8/89 3/1/91 1/4/96

| = Revised Section

N/A = Not Available

N/E = None Established

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