

# SAFETY DATA SHEET

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### Product identifier

**Product name:** Eastman(TM) MAK

**Product No.:** EAN 902185. 00133-00, P0013307, P0013308, P0013300, P0013301, P0013305, P0013309, P0013310, P0013311

**Synonyms, Trade Names:** 00133-00

### Additional identification

**Chemical name:** methyl amyl ketone  
**CAS-No.:** 110-43-0

### Relevant identified uses of the substance or mixture and uses advised against

**Identified uses:** Solvent

**Uses advised against:** None known.

### Details of the supplier of the safety data sheet

#### Manufacturer / Supplier

Eastman Chemical Company  
200 South Wilcox Drive  
Kingsport, TN 37660-5280 US  
+14232292000

Visit our website at [www.EASTMAN.com](http://www.EASTMAN.com) or email [emnmsds@eastman.com](mailto:emnmsds@eastman.com)

### Emergency telephone number:

For emergency health, safety, and environmental information, call 1-423-229-4511 or 1-423-229-2000.

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300 or call 423-229-2000.

## SECTION 2: Hazards identification

### Hazard classification:

#### Physical hazards

Flammable liquids Category 3

#### Health hazards

Acute toxicity (Inhalation) Category 4

Acute toxicity (Oral) Category 4

Specific target organ toxicity - single exposure Category 3

**OSHA Specified Hazards:** not applicable

### Warning label items including precautionary statement:

**Pictogram:**



**Signal words:** WARNING!

**Hazard Statement(s):** H226: Flammable liquid and vapor.  
H332: Harmful if inhaled.  
H302: Harmful if swallowed.  
H335: May cause respiratory irritation.  
H336: May cause drowsiness or dizziness.

**Precautionary statement:**

**Prevention:** P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P233: Keep container tightly closed.  
P240: Ground/bond container and receiving equipment.  
P241: Use explosion-proof electrical/ventilating/lighting/equipment.  
P242: Use only non-sparking tools.  
P243: Take precautionary measures against static discharge.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P261: Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264: Wash hands thoroughly after handling.  
P270: Do not eat, drink or smoke when using this product.  
P271: Use only outdoors or in a well-ventilated area.

**Response:** P370+P378: In case of fire; Use water spray, carbon dioxide, dry chemical or alcohol foam for extinction.  
P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.  
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330: Rinse mouth.  
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312: Call a POISON CENTER or doctor/physician if you feel unwell.

**Storage:** P403+P233: Store in a well-ventilated place. Keep container tightly closed.  
P235: Keep cool.  
P405: Store locked up.

**Disposal:** P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):** None known.

### SECTION 3: Composition/information on ingredients

#### Substances / Mixtures

**General information:**

Chemical name	Concentration	Additional identification	Notes
methyl n-amyl ketone	100%	CAS-No.: 110-43-0	#

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

# This substance has workplace exposure limit(s).

**SECTION 4: First aid measures****Description of first aid measures**

<b>Inhalation:</b>	Move to fresh air. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.
<b>Eye contact:</b>	Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms occur. In case of irritation from airborne exposure, move to fresh air. Get medical attention if symptoms persist.
<b>Skin contact:</b>	Wash with soap and water. Get medical attention if symptoms occur.
<b>Ingestion:</b>	Call a physician or poison control center immediately. Do NOT induce vomiting. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head lower than the hips to help prevent aspiration.

<b>Most important symptoms and effects, both acute and delayed:</b>	May irritate and cause redness and pain. Narcotic effect. Respiratory tract irritation.
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**Indication of any immediate medical attention and special treatment needed**

<b>Hazards:</b>	Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
<b>Treatment:</b>	Treat symptomatically.

**SECTION 5: Firefighting measures**

<b>General fire hazards:</b>	Combustible liquid and vapor. USE WATER WITH CAUTION. Material will float and may ignite on surface of water.
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**Extinguishing media**

<b>Suitable extinguishing media:</b>	Water spray. Dry chemical. Carbon Dioxide. Foam.
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<b>Unsuitable extinguishing media:</b>	None known.
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<b>Special hazards arising from the substance or mixture:</b>	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations.
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**Advice for firefighters**

**Special fire fighting procedures:** Water may be ineffective in fighting the fire. Use water spray to keep fire-exposed containers cool.

**Special protective equipment for fire-fighters:** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**SECTION 6: Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Wear appropriate personal protective equipment.

**Environmental precautions:** Avoid release to the environment.

**Methods and material for containment and cleaning up:** Eliminate sources of ignition. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Large Spillages: Use water spray to disperse vapors and flush spill area. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

**Notification Procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**SECTION 7: Handling and storage:**

**Precautions for safe handling:** Avoid breathing mists or vapors. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed and in a well-ventilated place.

**Specific end use(s):** Solvent

**SECTION 8: Exposure controls/personal protection**

**Control parameters**  
**Occupational exposure limits**

Country specific exposure limits have not been established or are not applicable unless listed below.

Chemical name	Type	Exposure Limit values	Source
heptan-2-one; methyl amyl ketone	TWA	50 ppm	US. ACGIH Threshold Limit Values (01 2010)
	PEL	100 ppm 465 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

**Exposure controls**

**Appropriate engineering controls:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

<b>General information:</b>	Eye bath. Safety shower. Washing facilities.
<b>Eye/face protection:</b>	It is a good industrial hygiene practice to minimize eye contact.
<b>Skin protection</b>	
<b>Hand protection:</b>	It is a good industrial hygiene practice to minimize skin contact.
<b>Other:</b>	No data available.
<b>Respiratory Protection:</b>	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.
<b>Hygiene measures:</b>	Observe good industrial hygiene practices.
<b>Environmental Controls:</b>	No data available.

**SECTION 9: Physical and chemical properties****Information on basic physical and chemical properties****Appearance**

<b>Physical State:</b>	Liquid
<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Pungent, Sweet
<b>Odor Threshold:</b>	0.2 ppm
<b>pH:</b>	No data available.
<b>Melting Point</b>	-36 °C
<b>Boiling Point:</b>	152 °C
<b>Flash Point:</b>	39 °C (Tag closed cup)
<b>Evaporation Rate:</b>	0.34
<b>Flammability (solid, gas):</b>	No data available.
<b>Flammability Limit - Upper (%)-:</b>	No data available.
<b>Flammability Limit - Lower (%)-:</b>	No data available.
<b>Vapor pressure:</b>	2.8 mbar (20 °C)
<b>Vapor density (air=1):</b>	3.9
<b>Specific Gravity:</b>	0.81 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in Water:</b>	Slightly Soluble
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	Pow: 95.4 log Pow: 1.98

<b>Autoignition Temperature:</b>	393 °C (ASTM D2155)
<b>Decomposition Temperature:</b>	(DTA) No exotherm to boiling
<b>Dynamic Viscosity:</b>	No data available.
<b>Kinematic viscosity:</b>	Not determined.
<b>Explosive properties:</b>	No data available.
<b>Oxidizing properties:</b>	No data available.

**SECTION 10: Stability and reactivity**

<b>Reactivity:</b>	None known.
<b>Chemical stability:</b>	Stable
<b>Possibility of hazardous reactions:</b>	None known.
<b>Conditions to avoid:</b>	Heat, sparks, flames.
<b>Incompatible materials:</b>	Strong oxidizing agents.
<b>Hazardous decomposition products:</b>	Carbon Dioxide. Carbon Monoxide.

**SECTION 11: Toxicological information**

**Information on likely routes of exposure**

<b>Inhalation:</b>	Harmful if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness.
<b>Ingestion:</b>	Harmful if swallowed.
<b>Skin contact:</b>	None known.
<b>Eye contact:</b>	None known.

**Information on toxicological effects**

**Acute Toxicity**

**Oral**

<b>Product:</b>	No data available.
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**Specified substance(s)**

heptan-2-one; methyl amyl ketone	Oral LD-50: (Rat): 1,600 mg/kg
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**Dermal**

<b>Product:</b>	No data available.
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**Specified substance(s)**

heptan-2-one; methyl amyl ketone	Dermal LD-50: (Rat): > 2,000 mg/kg
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**Inhalation**

<b>Product:</b>	No data available.
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<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	LC50 (Rat, 4 h): > 16.7 mg/l
<b>Repeated dose toxicity</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	No data available.
<b>Skin corrosion/irritation:</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	(Rabbit, 24 h): moderate
<b>Serious eye damage/eye irritation:</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	(Rabbit, 24 h): slight
<b>Respiratory or skin sensitization:</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	Skin Sensitization:, (Mouse) - non-sensitizing
<b>Mutagenicity</b>	
<b>In vitro</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	No data available.
<b>In vivo</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	No data available.
<b>Carcinogenicity</b> <b>Product:</b>	No data available.
<b>Specified substance(s)</b> heptan-2-one; methyl amyl ketone	No data available.
<b>Reproductive toxicity</b> <b>Product:</b>	No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Specific target organ toxicity - single exposure**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Specific target organ toxicity - repeated exposure**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Aspiration hazard**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone May be harmful if swallowed and enters airways.

**Other adverse effects:** No data available.

**SECTION 12: Ecological information****Toxicity****Acute toxicity****Fish**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone LC-50 (Fathead Minnow, 96 h): 131 mg/l

**Aquatic invertebrates**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Chronic Toxicity****Fish**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Aquatic invertebrates**

**Product:** No data available.

**Specified substance(s)**



heptan-2-one; methyl amyl ketone No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone ErC50 (Selenastrum capricornutum, 72 h): 98.2 mg/l

**Persistence and degradability**

**Biodegradation**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone 69 % (28 d, Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test))

**Biological Oxygen Demand:**

**Product** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone BOD-5: 1,770 mg/g  
 BOD-20: 2,000 mg/g

**Chemical Oxygen Demand:**

**Product** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone 2,420 mg/g

**BOD/COD ratio**

**Product** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Bioaccumulative potential**

**Product:** No data available.

**Specified substance(s)**

heptan-2-one; methyl amyl ketone No data available.

**Mobility in soil:**

No data available.

**Known or predicted distribution to environmental compartments**

heptan-2-one; methyl amyl ketone No data available.

**Results of PBT and vPvB assessment:**

No data available.

heptan-2-one; methyl amyl ketone No data available.

Other adverse effects: No data available.

### SECTION 13: Disposal considerations

#### Waste treatment methods

**General information:** No data available.

**Disposal methods:** Dispose of waste and residues in accordance with local authority requirements. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

### SECTION 14: Transport information

*Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.*

#### DOT

Class combustible liquid, Packing group III for quantities of 450 liters (119 gallons) or more; not regulated for smaller quantities

Possible Shipping Description(s):

not regulated

UN 1110 n-Amyl methyl ketone combustible liquid III

#### IMDG - International Maritime Dangerous Goods Code

Possible Shipping Description(s):

UN 1110 n-AMYL METHYL KETONE 3 III

#### IATA

Possible Shipping Description(s):

UN 1110 n-Amyl methyl ketone 3 III

### SECTION 15: Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

**This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

**WHMIS (Canada) Status:** controlled  
**WHMIS (Canada) Hazard Classification:** B/3, D/2/B

**SARA 311-312 Hazard Classification(s):**  
immediate (acute) health hazard  
fire hazard

**US EPCRA (SARA Title III) Section 313 - Toxic Chemical List**  
NONE

**OSHA:** hazardous

**TSCA (US Toxic Substances Control Act):** This product is listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

**DSL (Canadian Domestic Substances List) and CEPA (Canadian Environmental Protection Act):** This product is listed on the DSL. Any impurities present in this product are exempt from listing.

**AICS / NICNAS (Australian Inventory of Chemical Substances and National Industrial Chemicals Notification and Assessment Scheme):** This product is listed on AICS or otherwise complies with NICNAS.

**MITI (Japanese Handbook of Existing and New Chemical Substances):** This product is listed in the Handbook or has been approved in Japan by new substance notification.

**ECL (Korean Toxic Substances Control Act):** This product is listed on the Korean inventory or otherwise complies with the Korean Toxic Substances Control Act.KE-18303

**Philippines Inventory (PICCS) :** This product is listed on the Philippine Inventory or otherwise complies with PICCS.

**Inventory of Existing Chemical Substances in China:** All components of this product are listed on the Inventory of Existing Chemical Substances in China (IECSC).

## SECTION 16: Other information

**HMIS® Hazard Ratings:** Health - 2, Flammability - 2, Chemical Reactivity - 0

*HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.*

**Revision Information:** Not relevant.

**Key literature references and sources for data:** No data available.

**Training information:** No data available.

**Issue date:** 07/07/2014

**SDS No.:**

**Disclaimer:** This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.