

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Methyl Ethyl Ketone (247)

MSDS Number : 000000011388

Product Use Description : Solvent

Manufacturer or supplier's details : Honeywell International Inc.
101 Columbia Road
Morristown, NJ 07962-1057

For more information call : 1-800-368-0050
+1-231-726-3171
(Monday-Friday, 9:00am-5:00pm)

In case of emergency call : Medical: 1-800-498-5701 or +1-303-389-1414
: **Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**
:
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview**

Form : liquid, clear

Color : colourless

Odor : sweet pungent acetone-like

Classification of the substance or mixture

Classification of the substance or mixture : Flammable liquids, Category 2
Eye irritation, Category 2A
Specific target organ toxicity - single exposure, Category 3,
Central nervous system

Methyl Ethyl Ketone (247)

00000011388

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

GHS Label elements, including precautionary statements

Symbol(s)



Signal word

: Danger

Hazard statements

: Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness and dizziness.

Precautionary statements

: **Prevention:**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting/ equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear eye/face protection.**Response:**IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor/ physician if you feel unwell.
If eye irritation persists: Get medical advice/ attention.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.**Storage:**Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Carcinogenicity

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, IARC, or OSHA.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTSFormula : C₄H₈O

Chemical nature : Substance

Chemical Name	CAS-No.	Concentration
2-Butanone	78-93-3	100.00 %

SECTION 4. FIRST AID MEASURES

Inhalation : Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Use oxygen as required, provided a qualified operator is present. Call a physician.

Skin contact : Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and shoes immediately. Wash contaminated clothing before re-use. Call a physician.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician.

Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

Notes to physician

Treatment : Treat symptomatically.

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
Cool closed containers exposed to fire with water spray.
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : Extremely flammable.
Vapours may form explosive mixtures with air.
Vapours are heavier than air and may spread along floors.
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.
In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Wear personal protective equipment. Unprotected persons must be kept away.
Immediately evacuate personnel to safe areas.
Keep people away from and upwind of spill/leak.
Ensure adequate ventilation.
Remove all sources of ignition.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.
Do not flush into surface water or sanitary sewer system.
Discharge into the environment must be avoided.
Do not allow run-off from fire fighting to enter drains or water

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

courses.

Methods for cleaning up : Ventilate the area.
No sparking tools should be used.
Use explosion-proof equipment.
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7. HANDLING AND STORAGE**Handling**

Handling : Wear personal protective equipment.
Use only in well-ventilated areas.
Keep container tightly closed.
Do not smoke.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.
Take precautionary measures against static discharges.
Ensure all equipment is electrically grounded before beginning transfer operations.
Use explosion-proof equipment.
Keep product and empty container away from heat and sources of ignition.
No sparking tools should be used.
No smoking.

Storage

Requirements for storage areas and containers : Store in area designed for storage of flammable liquids.
Protect from physical damage.
Keep containers tightly closed in a dry, cool and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Keep away from heat and sources of ignition.
Keep away from direct sunlight.
Store away from incompatible substances.

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Container hazardous when empty.
Do not pressurize, cut, weld, braze, solder, drill, grind or
expose containers to heat or sources of ignition.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
- Engineering measures : Use with local exhaust ventilation.
Prevent vapour buildup by providing adequate ventilation during and after use.
- Eye protection : Do not wear contact lenses.
Wear as appropriate:
Safety glasses with side-shields
If splashes are likely to occur, wear:
Goggles or face shield, giving complete protection to eyes
- Hand protection : Solvent-resistant gloves
Gloves must be inspected prior to use.
Replace when worn.
- Skin and body protection : Wear as appropriate:
Solvent-resistant apron
Flame retardant antistatic protective clothing
If splashes are likely to occur, wear:
Protective suit
- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.
Use NIOSH approved respiratory protection.
- Hygiene measures : When using, do not eat, drink or smoke.
Wash hands and face before breaks and immediately after handling the product.
Keep working clothes separately.
Remove and wash contaminated clothing before re-use.
Do not swallow.
Avoid breathing vapours, mist or gas.
Avoid contact with skin, eyes and clothing.

Methyl Ethyl Ketone (247)

00000011388

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Exposure Guidelines

Components	CAS-No.	Value	Control parameters	Update	Basis
2-Butanone	78-93-3	TWA : time weighted average	(200 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
2-Butanone	78-93-3	STEL : Short term exposure limit	(300 ppm)	2008	ACGIH:US. ACGIH Threshold Limit Values
2-Butanone	78-93-3	REL : Recomm ended exposure limit (REL):	590 mg/m3 (200 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
2-Butanone	78-93-3	STEL : Short term exposure limit	885 mg/m3 (300 ppm)	2005	NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards
2-Butanone	78-93-3	PEL : Permissi ble exposure limit	590 mg/m3 (200 ppm)	02 2006	OSHA_TRANS:US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
2-Butanone	78-93-3	STEL : Short term exposure limit	885 mg/m3 (300 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)

Methyl Ethyl Ketone (247)**00000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

2-Butanone	78-93-3	TWA : time weighted average	590 mg/m3 (200 ppm)	1989	Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000)
------------	---------	--------------------------------------	------------------------	------	---

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	: liquid, clear
Color	: colourless
Odor	: sweet pungent acetone-like
pH	: Note: not applicable
Melting point/freezing point	: -86.69 °C
Boiling point/boiling range	: 79.64 °C
Flash point	: 16 °F (-9 °C)
Lower explosion limit	: 1 %(V)
Upper explosion limit	: 11.4 %(V)
Vapor pressure	: 98.66 hPa at 20 °C(68 °F)
Vapor density	: 2.5 Note: (Air = 1.0)
Density	: 0.805 g/cm3 at 20 °C
Water solubility	: 240 g/l at 20 °C

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Ignition temperature : 404 °C

Molecular weight : 72.11 g/mol

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Hazardous polymerisation does not occur.

Conditions to avoid : Heat, flames and sparks.
Protect against light.Incompatible materials to avoid : Strong oxidizing agents
Strong acids and strong bases
Amines
Ammonia
Isocyanates
Copper
Pyridine
Plastic materials can be attacked.Hazardous decomposition products : In case of fire hazardous decomposition products may be produced such as:
Carbon monoxide
Carbon dioxide (CO₂)**SECTION 11. TOXICOLOGICAL INFORMATION**Acute oral toxicity : LD₅₀: 2,737 mg/kg
Species: ratAcute inhalation toxicity : LC₅₀: 23.5 mg/l

Methyl Ethyl Ketone (247)**00000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Exposure time: 8 h
Species: rat

Acute dermal toxicity : LD50: 6,480 mg/kg
Species: rabbit

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish : flow-through test
LC50: 3,220 mg/l
Exposure time: 96 h
Species: Pimephales promelas (fathead minnow)

Toxicity to bacteria : EC50: 3,426 mg/l
Exposure time: 5 min
Species: Photobacterium phosphoreum

: EC50: 3,403 mg/l
Exposure time: 30 min
Species: Photobacterium phosphoreum

: Respiration inhibition
EC50: 9.98 g/l
Species: activated sludge

Further information on ecology**SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

SECTION 14. TRANSPORT INFORMATION

DOT UN/ID No. : UN 1193
Proper shipping name : Ethyl methyl ketone
Class : 3
Packing group : II
Hazard Labels : 3

IATA UN/ID No. : UN 1193
Description of the goods : Ethyl methyl ketone
Class : 3
Packaging group : II
Hazard Labels : 3
Packing instruction (cargo aircraft) : 364
Packing instruction (passenger aircraft) : 353
Packing instruction (passenger aircraft) : Y341

IMDG UN/ID No. : UN 1193
Description of the goods : Ethyl methyl ketone
Class : 3
Packaging group : II
Hazard Labels : 3
EmS Number : F-E, S-D
Marine pollutant : no

SECTION 15. REGULATORY INFORMATION**Inventories**

US. Toxic Substances : On TSCA Inventory
Control Act

Australia. Industrial : On the inventory, or in compliance with the inventory
Chemical (Notification and
Assessment) Act

Canada. Canadian : All components of this product are on the Canadian DSL.
Environmental Protection

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Act (CEPA). Domestic
Substances List (DSL)

Japan. Kashin-Hou Law : On the inventory, or in compliance with the inventory
List

Korea. Toxic Chemical : On the inventory, or in compliance with the inventory
Control Law (TCCL) List

Philippines. The Toxic : On the inventory, or in compliance with the inventory
Substances and Hazardous
and Nuclear Waste Control
Act

China. Inventory of Existing : On the inventory, or in compliance with the inventory
Chemical Substances

New Zealand. Inventory of : On the inventory, or in compliance with the inventory
Chemicals (NZIoC), as
published by ERMA New
Zealand

National regulatory information

US. Drug Enforcement : Listed
Administration (DEA) Listed
Essential Chemicals (21 :
CFR 1310.02(b) and
1310.04(f)(2))
DEA EC

US. EPA CERCLA : 2-Butanone 78-93-3
Hazardous Substances (40 : The following component(s) of this product is/are subject to
CFR 302) : release reporting under 40 CFR 302 when release exceeds the
Reportable Quantity (RQ):

Reportable quantity: 5000 lbs
: 2-Butanone 78-93-3

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

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Title III, Section 313.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

CERCLA Reportable Quantity : 5000 lbs

California Prop. 65 : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Massachusetts RTK : 2-Butanone 78-93-3

New Jersey RTK : 2-Butanone 78-93-3

Pennsylvania RTK : 2-Butanone 78-93-3

WHMIS Classification : B2: Flammable liquid
D2A: Very Toxic Material Causing Other Toxic Effects
D2B: Toxic Material Causing Other Toxic Effects
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

	HMIS III	NFPA
Health hazard	: 2*	1
Flammability	: 3	3
Physical Hazard	: 0	
Instability	:	0

* - Chronic health hazard

Methyl Ethyl Ketone (247)**000000011388**

Version 1.5

Revision Date 04/01/2014

Print Date 09/10/2014

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Previous Issue Date: 06/14/2012

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group