

**Methylethyl ketoxime****00000007015**

Version 1.5

Revision Date 04/11/2013

Print Date 07/16/2014

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Methylethyl ketoxime

MSDS Number : 00000007015

Product Use Description : Chemical intermediate

Company : Honeywell International Inc.  
101 Columbia Road  
Morristown, NJ 07962-1057

For more information call : 1-877-370-7007  
+1-804-541-5000  
(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

Color : colourless

Odor : ether-like

Hazard Summary : Combustible. Corrosive. Harmful by inhalation. May be harmful if swallowed. May be harmful if absorbed through skin. Causes severe eye burns. Irritating to respiratory system. Causes headache, drowsiness or other effects to the central nervous system. May irritate skin. May cause allergic skin reaction. May cause irritation of the gastrointestinal tract. Do not swallow. Avoid breathing vapors, mist or gas. Avoid contact with skin, eyes and clothing. Will reduce the ability of the blood to transport oxygen (methemoglobinemia and

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anemia). Based on animal evidence, there is limited evidence of a carcinogenic effect. The significance of these findings for humans has not been determined.

**Potential Health Effects**

- Skin** : May be harmful if absorbed through skin.  
May irritate skin.  
May cause allergic skin reaction.  
May cause systemic poisoning with symptoms paralleling those of inhalation.
- Eyes** : Corrosive - causes irreversible eye damage.  
Causes severe eye burns.  
Causes serious eye irritation.  
May cause irreversible eye damage.
- Ingestion** : May be harmful if swallowed.  
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.  
May cause systemic poisoning with symptoms paralleling those of inhalation.  
Will reduce the ability of the blood to transport oxygen (methemoglobinemia and anemia).
- Inhalation** : Harmful by inhalation.  
May cause respiratory tract irritation.  
Vapours may be irritating to eyes, nose, throat, and lungs.  
The vapour may have narcotic effect  
Inhalation of high vapour concentrations can cause CNS-depression and narcosis.  
Will reduce the ability of the blood to transport oxygen (methemoglobinemia and anemia).
- Chronic Exposure** : Based on animal evidence, there is limited evidence of a carcinogenic effect.  
The significance of these findings for humans has not been determined.
- Aggravated Medical Condition** : Eye disorders  
Skin disorders  
Respiratory disorders
- Target Organs** : Eyes

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Skin  
Respiratory system  
Central nervous system  
Gastrointestinal tract

**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 INGREDIENTS**

Chemical nature : Substance

Chemical Name	CAS-No.	Concentration
2-Butanone oxime	96-29-7	>99.00 %
Butan-2-ol	78-92-2	<0.50 %
2-Butanone	78-93-3	<0.50 %
Water	7732-18-5	<0.25 %

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

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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.

**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
Cool closed containers exposed to fire with water spray.

Specific hazards during firefighting : Combustible.  
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:  
Methyl ethyl ketone  
Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.

Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions : Wear personal protective equipment.  
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 vapors, mist or gas.

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- Avoid contact with skin, eyes and clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Discharge into the environment must be avoided.  
Do not flush into surface water or sanitary sewer system.  
Prevent product from entering drains.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Methods for cleaning up : Ventilate the area.  
No sparking tools should be used.  
Use explosion-proof equipment.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
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 vapors, 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**

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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. 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 vapor buildup by providing adequate ventilation during and after use.

Eye protection : Do not wear contact lenses. Wear as appropriate:  
Safety glasses with side-shields  
Safety goggles  
If splashes are likely to occur, wear:  
Goggles or face shield, giving complete protection to eyes

Hand protection : Impervious butyl rubber gloves  
Neoprene gloves  
Nitrile rubber  
Gloves must be inspected prior to use.  
Replace when worn.

Skin and body protection : Wear as appropriate:  
Solvent-resistant apron and boots  
Flame retardant protective clothing  
If splashes are likely to occur, wear:  
Protective suit

Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.

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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 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 vapors, mist or gas.  
Avoid contact with skin, eyes and clothing.

**Exposure Guidelines**

Components	CAS-No.	Value	Control parameters	Update	Basis
2-Butanone oxime	96-29-7	TWA : time weighted average	36 mg/m <sup>3</sup> (10 ppm)	2007	WEEL:US. AIHA Workplace Environmental Exposure Level (WEEL) Guides
2-Butanone oxime	96-29-7	TWA : time weighted average	(3 ppm)	12/15/1995	Honeywell:Limit established by Honeywell International Inc.
2-Butanone oxime	96-29-7	STEL : Short term exposure limit	(10 ppm)	12/15/1995	Honeywell:Limit established by Honeywell International Inc.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state : liquid  
Color : colourless  
Odor : ether-like

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pH	:	7.0 - 8.5 at , 20 °C
Melting point/freezing point	:	-29 °C
Boiling point/boiling range	:	152 °C at 1,013 hPa
Flash point	:	145 °F (63 °C)
Lower explosion limit	:	Note: None
Upper explosion limit	:	Note: None
Vapor pressure	:	10.7 hPa at 20 °C(68 °F)
Density	:	0.92 g/cm <sup>3</sup> at 20 °C
Water solubility	:	Note: slightly soluble
Partition coefficient: n-octanol/water	:	log Pow: 0.63 at 25 °C
Auto-ignition temperature	:	314 - 317 °C
Molecular Weight	:	87.12 g/mol

**SECTION 10. STABILITY AND REACTIVITY**

Chemical stability : Stable under normal conditions.



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Possibility of hazardous reactions	: Hazardous polymerisation does not occur.
Conditions to avoid	: Heat, flames and sparks. Keep away from direct sunlight.
Incompatible materials to avoid	: Strong acids Oxidizing agents Bases
Hazardous decomposition products	: In case of fire hazardous decomposition products may be produced such as: Methyl ethyl ketone Carbon dioxide (CO <sub>2</sub> ), carbon monoxide (CO), oxides of nitrogen (NO <sub>x</sub> ), dense black smoke.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity	: LD50: 2,326 mg/kg Species: rat
Acute inhalation toxicity	: LC50: > 4.8 mg/l Exposure time: 4 h Species: rat
Acute dermal toxicity	: LD50: 1,000 - 1,800 mg/kg Species: rabbit
Skin irritation	: Species: rabbit Result: Mild skin irritation
Eye irritation	: Species: rabbit Result: Risk of serious damage to eyes. Classification: Corrosive
Sensitisation	: Species: guinea pig Result: Causes sensitization.

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Classification: May cause sensitization by skin contact.

- Repeated dose toxicity
- : Species: rat  
Application Route: Oral gavage bioassay  
Exposure time: 13 Weeks  
Lowest observed adverse effect level: 25 mg/kg/d  
Note: Subchronic toxicity Blood effects anemia
  - : Species: rat  
Application Route: Inhalation  
Exposure time: 4 Weeks  
NOEL: 25 ppm  
Note: Subchronic toxicity Blood effects anemia
  - : Species: rat  
Application Route: Inhalation  
Exposure time: 26 Months  
Note: Carcinogenicity Liver tumors 374 ppm
  - : Species: mouse  
Application Route: Inhalation  
Exposure time: 18 Months  
Note: Carcinogenicity Liver tumors 374 ppm
  - : Species: rat  
Application Route: Oral  
Exposure time: 13 Weeks  
NOEL: 13 mg/kg  
Note: Transient target organ effects central nervous system effects
- Genotoxicity in vitro : Note: In vitro tests did not show mutagenic effects
- Genotoxicity in vivo : Note: In vivo tests did not show mutagenic effects
- Reproductive toxicity : Species: rat  
Application Route: Oral  
Exposure time: Two-generation reproductive toxicity  
Note: No toxicity to reproduction

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- Teratogenicity : Species: rat  
Application Route: Oral  
Note: Did not show teratogenic effects in animal experiments, even at maternally toxic concentrations.
- : Species: rabbit  
Application Route: Oral  
Note: Did not show teratogenic effects in animal experiments, even at maternally toxic concentrations.
- Further information : Chronic toxicity Based on animal evidence, there is limited evidence of a carcinogenic effect. The significance of these findings for humans has not been determined.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity effects**

- Toxicity to fish : LC50: > 100 mg/l  
Exposure time: 96 h  
Species: *Oryzias latipes* (Orange-red killifish)
- : LC50: > 100 mg/l  
Exposure time: 14 d  
Species: *Oryzias latipes* (Orange-red killifish)
- : NOEC: 50 mg/l  
Exposure time: 14 d  
Species: *Oryzias latipes* (Orange-red killifish)
- Toxicity to daphnia and other aquatic invertebrates : Reproduction Test  
EC50: > 100 mg/l  
Exposure time: 21 d  
Species: *Daphnia*  
Method: OECD
- : static test  
EC50: 201 mg/l  
Exposure time: 48 h  
Species: *Daphnia*

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Method: OECD

- Toxicity to algae
- : Biomass  
EC50: 6.1 mg/l  
Exposure time: 72 h  
Species: Scenedesmus capricornutum (fresh water algae)  
Method: OECD Test Guideline 201
  - : Growth rate  
EC50: 11.8 mg/l  
Exposure time: 72 h  
Species: Scenedesmus capricornutum (fresh water algae)  
Method: OECD Test Guideline 201
  - : Biomass  
NOEC: 1.02 mg/l  
Exposure time: 72 h  
Species: Scenedesmus capricornutum (fresh water algae)  
Method: OECD Test Guideline 201
  - : Growth rate  
NOEC: 2.56 mg/l  
Exposure time: 72 h  
Species: Scenedesmus capricornutum (fresh water algae)  
Method: OECD Test Guideline 201

**Elimination information (persistence and degradability)**

Biodegradability : Result: Inherently biodegradable.

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

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

**SECTION 14. TRANSPORT INFORMATION**

DOT UN/ID No. : NA 1993

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Proper shipping name : Combustible liquid, n.o.s.  
(Methylethyl ketoxime)  
Class CBL  
Packing group III  
Hazard Labels NON  
Required only for US-DOT Bulk Shipments

**TDG** Not dangerous goods

**IATA** Not dangerous goods

**IMDG** Not dangerous goods

**SECTION 15. REGULATORY INFORMATION****Inventories**

US. Toxic Substances Control Act : On TSCA Inventory

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

Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL.

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

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

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

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

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NZIOC - New Zealand : On the inventory, or in compliance with the inventory

**National 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** : Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard

**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.

**WHMIS Classification** : B3: Combustible Liquid  
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**

	<b>HMIS III</b>	<b>NFPA</b>
Health hazard	: 2*	2
Flammability	: 2	2
Physical Hazard	: 0	

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Instability : 1

\* - Chronic health hazard

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.

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Prepared by: Honeywell Performance Materials and Technologies Product Stewardship Group