

Revision Date 23-Mar-2012

Revision Number 2

## SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

**Product Identifier**

**Product Description:** 2-Hexanone  
**Cat No.** 146881000; 146880000; 146885000  
**Synonyms** Butyl methyl ketone; Methyl butyl ketone

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

**Recommended Use** Laboratory chemicals  
**Uses advised against** No Information available

**Details of the supplier of the safety data sheet**

**Company**

Acros Organics BVBA  
 Janssen Pharmaceuticaaan 3a  
 2440 Geel, Belgium

**E-mail address** begel.sdsdesk@thermofisher.com

**Emergency Telephone Number**

For information in the US, call: 001-800-ACROS-01  
 For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99  
 Emergency Number, US: 001-201-796-7100

CHEMTREC Phone Number, US: 001-800-424-9300  
 CHEMTREC Phone Number, Europe: 001-703-527-3887

## SECTION 2. HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

**REGULATION (EC) No 1272/2008**

Reproductive Toxicity	Category 2
Specific target organ systemic toxicity (single exposure)	Category 3
Specific target organ systemic toxicity (repeated exposure)	Category 1
Flammable liquids.	Category 3

**Classification according to EU Directives 67/548/EEC or 1999/45/EC**

*For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16*

**Symbol(s)** T - Toxic  
**R-phrases(s)** R10 - Flammable  
 R62 - Possible risk of impaired fertility  
 R67 - Vapors may cause drowsiness and dizziness  
**Risk Combination Phrases** R48/23 - Toxic: danger of serious damage to health by prolonged exposure through inhalation

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**SECTION 2. HAZARDS IDENTIFICATION**

Label Elements



Signal Word

**Danger**

Hazard Statements

- H336 - May cause drowsiness or dizziness
- H372 - Causes damage to organs through prolonged or repeated exposure
- H361f - Suspected of damaging fertility
- H226 - Flammable liquid and vapor

Precautionary Statements - EU (§28, 1272/2008)

- P281 - Use personal protective equipment as required
- P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing

Other Hazards

No information available.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	EC-No.	Weight %	CAS-No	67/548/EEC Classification	CLP Classification - Regulation (EC) No 1272/2008	REACH No.
2-Hexanone 591-78-6	EEC No. 209-731-1	98	591-78-6	R10 T; R48/23 Repr.Cat.3; R62 R67	Repr. 2 (H361f) STOT SE 3 (H336) STOT RE 1 (H372) Flam. Liq. 3 (H226)	-

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For the full text of the R-phrases and H-Statements mentioned in this Section, see Section 16

#### SECTION 4. FIRST AID MEASURES

##### Description of first aid measures

###### **Eye Contact**

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area..

###### **Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

###### **Ingestion**

Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician immediately. If possible drink milk afterwards.

###### **Inhalation**

Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

###### **Notes to Physician**

Treat symptomatically

#### SECTION 5. FIRE-FIGHTING MEASURES

##### Extinguishing media

###### **Suitable Extinguishing Media**

Carbon dioxide (CO<sub>2</sub>). Dry chemical. Use water spray to cool unopened containers. chemical foam.

###### **Extinguishing media which must not be used for safety reasons**

No information available.

###### **Special hazards arising from the substance or mixture**

Flammable. Vapors may travel to source of ignition and flash back.

###### **Advice for fire-fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### SECTION 6. ACCIDENTAL RELEASE MEASURES

##### Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation

##### Environmental precautions

Prevent further leakage or spillage if safe to do so

##### Methods and material for containment and cleaning up

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Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

### SECTION 7. HANDLING AND STORAGE

**Precautions for Safe Handling**

Do not breathe dust. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges.

**Conditions for safe storage, including any incompatibilities**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area.

**Specific End Uses**

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**
**Exposure limits**
**Component**

2-Hexanone

European Union	The United Kingdom	France	Belgium	Spain
	STEL: 15 ppm 15 min STEL: 63 mg/m <sup>3</sup> 15 min TWA: 5 ppm 8 hr TWA: 21 mg/m <sup>3</sup> 8 hr Skin	VME: 5 ppm 8 heures. VME: 20 mg/m <sup>3</sup> 8 heures. VLCT: 8 ppm VLCT: 35 mg/m <sup>3</sup>	TWA: 5 ppm 8 uren TWA: 21 mg/m <sup>3</sup> 8 uren STEL: 10 ppm 15 minuten STEL: 42 mg/m <sup>3</sup> 15 minuten Skin	Skin VLA-ED: 5 ppm 8 horas VLA-ED: 21 mg/m <sup>3</sup> 8 horas

**Component**

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Italy	Germany	Portugal	The Netherlands	Finland
	MAK: 5 ppm 8 Stunden. MAK: 21 mg/m <sup>3</sup> 8 Stunden. skin notation Skin Peak: 40 ppm Peak: 168 mg/m <sup>3</sup> TWA: 5 ppm 8 Stunden. exposure factor 8 TWA: 21 mg/m <sup>3</sup> 8 Stunden. exposure factor 8	STEL: 10 ppm 15 minutos TWA: 5 ppm 8 horas Skin		TWA: 5 ppm 8 tunteina TWA: 21 mg/m <sup>3</sup> 8 tunteina STEL: 10 ppm 15 minuutteina STEL: 42 mg/m <sup>3</sup> 15 minuutteina Skin

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**Component  
2-Hexanone**

Austria	Denmark	Switzerland	Poland	Norway
Skin STEL: 20 ppm 15 Minuten STEL: 84 mg/m <sup>3</sup> 15 Minuten TWA: 5 ppm 8 Stunden TWA: 21 mg/m <sup>3</sup> 8 Stunden	TWA: 1 ppm 8 timer TWA: 4 mg/m <sup>3</sup> 8 timer Skin	Skin STEL: 40 ppm 15 Minuten STEL: 168 mg/m <sup>3</sup> 15 Minuten MAK: 5 ppm 8 Stunden MAK: 21 mg/m <sup>3</sup> 8 Stunden	NDS: 10 mg/m <sup>3</sup> 8 godzinach	TWA: 1 ppm 8 timer TWA: 4 mg/m <sup>3</sup> 8 timer STEL: 3 ppm 15 minutter. STEL: 8 mg/m <sup>3</sup> 15 minutter. Skin

**Component  
2-Hexanone**

Bulgaria	Croatia	Ireland	Cyprus	Czech Republic
TWA: 20.0 mg/m <sup>3</sup>	Skin Notation TWA: 5 ppm 8 satima. TWA: 21 mg/m <sup>3</sup> 8 satima.	TWA: 5 ppm 8 hr. TWA: 20 mg/m <sup>3</sup> 8 hr. Skin		TWA: 20 mg/m <sup>3</sup> 8 hodinách. Potential for cutaneous absorption Ceiling: 40 mg/m <sup>3</sup>

**Component  
2-Hexanone**

Estonia	Gibraltar	Greece	Hungary	Iceland
Skin notation TWA: 1 ppm 8 tundides. TWA: 4 mg/m <sup>3</sup> 8 tundides. STEL: 2 ppm 15 minutites. STEL: 8 mg/m <sup>3</sup> 15 minutites.		skin - potential for cutaneous absorption TWA: 5 ppm TWA: 20 mg/m <sup>3</sup>	STEL: 84 mg/m <sup>3</sup> 15 percekben. TWA: 21 mg/m <sup>3</sup> 8 óraban. potential for cutaneous absorption	TWA: 1 ppm 8 klukkustundum. TWA: 4 mg/m <sup>3</sup> 8 klukkustundum. Skin notation Ceiling: 2 ppm Ceiling: 8 mg/m <sup>3</sup>

**Component  
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Latvia	Lithuania	Luxembourg	Malta	Romania
	TWA: 1 ppm TWA: 4 mg/m <sup>3</sup> Skin notation STEL: 2 ppm STEL: 8 mg/m <sup>3</sup>			TWA: 49 ppm 8 ore TWA: 200 mg/m <sup>3</sup> 8 ore STEL: 80 ppm 15 minute STEL: 300 mg/m <sup>3</sup> 15 minute

**Component  
2-Hexanone**

Russia - TWA	Slovak Republic	Slovenia	Sweden	Turkey
		TWA: 5 ppm 8 urah TWA: 21 mg/m <sup>3</sup> 8 urah Potential for cutaneous absorption STEL: 20 ppm 15 minutah STEL: 84 mg/m <sup>3</sup> 15 minutah	STV: 2 ppm 15 minuter STV: 8 mg/m <sup>3</sup> 15 minuter LLV: 1 ppm 8 timmar. LLV: 4 mg/m <sup>3</sup> 8 timmar. Skin notation	

**Biological limit values**
**Component  
2-Hexanone**

European Union	United Kingdom	France	Spain	Germany
			2,5-Hexanedione (without hydrolysis): 0.4 mg/L urine end of workweek	2,5-Hexanedione plus 4,5-Dihydroxy-2- hexanone: 5 mg/L urine end of shift

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Component	Austria	Switzerland	Poland	Norway	Ireland
2-Hexanone		2,5-Hexanedione plus 4,5-Dihydroxy-2-hexanone: 5 mg/L urine end of shift			

Component	Slovak Republic	Turkey
2-Hexanone	2,5-Hexanedione: 5 mg/L urine end of exposure or work shift 2,5-Hexanedione: 5 mg/L urine after all work shifts for long-term exposure	

**Derived No Effect Level (DNEL)** No information available.  
**Predicted No Effect Concentration (PNEC)** No information available.

**Exposure controls**

**Engineering Measures** Ensure adequate ventilation, especially in confined areas  
**Personal protective equipment**  
**Eye Protection** Goggles  
**Hand Protection** Protective gloves  
**Skin and body protection** Wear appropriate protective gloves and clothing to prevent skin exposure  
**Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice  
**Environmental exposure controls** No information available.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Light yellow
<b>odor</b>	pungent
<b>pH</b>	No information available.
<b>Vapor Pressure</b>	20 @ 10 mmHg °C
<b>Vapor Density</b>	3.5 (Air = 1.0)
<b>Boiling Point/Range</b>	127°C / 260.6°F
<b>Melting Point/Range</b>	-57°C / -70.6°F
<b>Flash Point</b>	23°C / 73.4°F
<b>Autoignition Temperature</b>	423°C / 793.4°F
<b>Explosion Limits</b>	
<b>Lower</b>	1.2
<b>Upper</b>	8
<b>Water Solubility</b>	20g/L (20°C)

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**Specific Gravity** 0.810  
**Molecular Formula** C6 H12 O  
**Molecular Weight** 100.16

**SECTION 10. STABILITY AND REACTIVITY**

**Reactivity**

**Chemical Stability**

Stable under normal conditions.

**Possibility of Hazardous Reactions**

**Hazardous Polymerization** Hazardous polymerization does not occur.  
**Hazardous Reactions .** No information available.

**Conditions to Avoid**

Keep away from open flames, hot surfaces and sources of ignition, Incompatible products.

**Incompatible Materials**

Strong bases, Reducing agents.

**Hazardous Decomposition Products**

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

**SECTION 11. TOXICOLOGICAL INFORMATION**

**Information on Toxicological Effects**

**Acute Toxicity**

**Product Information** No acute toxicity information is available for this product

**Component Information**

<b>Component</b>	<b>LD50 Oral</b>	<b>LD50 Dermal</b>	<b>LC50 Inhalation</b>
2-Hexanone	2590 mg/kg ( Rat )	4800 mg/kg ( Rabbit )	8000 ppm ( Rat ) 4 h

**Chronic Toxicity**

**Carcinogenicity** There are no known carcinogenic chemicals in this product

**Sensitization** No information available.  
**Mutagenic Effects** No information available



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**Reproductive Effects** No information available.  
**Developmental Effects** No information available.  
**Target Organs** No information available.  
**Other Adverse Effects** See actual entry in RTECS for complete information  
**Endocrine Disruptor Information** None known

**SECTION 12. ECOLOGICAL INFORMATION**

**Toxicity**

**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants

<b>Component</b>	<b>Freshwater Algae</b>	<b>Freshwater Fish</b>	<b>Microtox</b>	<b>Water Flea</b>
2-Hexanone		428 mg/L LC50 96 h		

**Persistence and degradability**

No information available

**Bioaccumulative potential**

Bioaccumulation is unlikely

<b>Component</b>	<b>log Pow</b>
2-Hexanone	1.38

**Mobility in soil**

**Results of PBT and vPvB assessment**

**Other adverse effects**

No information available

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Waste from Residues / Unused Products** Dispose of in accordance with local regulations

**Contaminated Packaging** Empty containers should be taken to local recyclers for disposal



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**SECTION 14. TRANSPORT INFORMATION**
**IMDG/IMO**

UN-No 1224  
 Hazard Class 3  
 Packing Group III  
 Proper Shipping Name KETONES, LIQUID, N.O.S.

**ADR**

UN-No 1224  
 Hazard Class 3  
 Packing Group III  
 Proper Shipping Name KETONES, LIQUID, N.O.S.

**IATA**

UN-No 1224  
 Hazard Class 3  
 Packing Group III  
 Proper Shipping Name KETONES, LIQUID, N.O.S.\*

**SECTION 15. REGULATORY INFORMATION**
**Safety, health and environmental regulations/legislation specific for the substance or mixture**
**International Inventories**

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
2-Hexanone	209-731-1	-		S	X	-	X	X	X	X	X

**Legend**

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**ENCS** - Japan Existing and New Chemical Substances

**CHINA** - China Inventory of Existing Chemical Substances

**AICS** - Inventory of Chemical Substances

**KECL** - Existing and Evaluated Chemical Substances

**Chemical Safety Assessment**

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**SECTION 16. OTHER INFORMATION****Full text of R-phrases referred to under sections 2 and 3**

R10 - Flammable

R62 - Possible risk of impaired fertility

R67 - Vapors may cause drowsiness and dizziness

R48/23 - Toxic: danger of serious damage to health by prolonged exposure through inhalation

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Revision Summary

Reason for revision Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

**Disclaimer**

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of Safety Data Sheet