SAFETY DATA SHEET

Creation Date 13-Apr-2009 **Revision Date** 13-Apr-2009 **Revision Number** *1*

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name **2-Butanone**
Cat No. **149670000; 149670010; 149670025; 149670051; 149670250; 149670251**
Synonyms Methyl ethyl ketone; Mek
Recommended Use No information available.

Company Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

Emergency Telephone Number

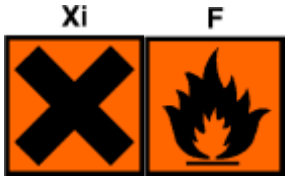
For information in the US, call: 800-ACROS-01
For information in Europe, call: +32 14 57 52 11

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

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

2. HAZARDS IDENTIFICATION

The product is classified as dangerous in accordance with Directive 1999/45/EC or 67/548/EEC.



R -phrase(s)
R11 - Highly flammable
R36 - Irritating to eyes
R66 - Repeated exposure may cause skin dryness or cracking
R67 - Vapors may cause drowsiness and dizziness

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	Weight %	EC No.	Classification
Methyl ethyl ketone 78-93-3	100	EEC No. 201-159-0	F;R11 Xi;R36 R66 R67

For the full text of the R phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
Ingestion	Do not induce vomiting. Obtain medical attention.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

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

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Flammable. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

Flash Point	-7°C / 19.4°F
Method	No information available.
Autoignition Temperature	404°C / 759.2°F
Explosion Limits	
Lower	1.8 Vol%
Upper	11.5 Vol%

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material Keep in suitable and closed containers for disposal Remove all sources of ignition Use spark-proof tools and explosion-proof equipment

7. HANDLING AND STORAGE

Handling Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges.

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

Specific use(s) No information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits

The product does not contain any hazardous materials with occupational exposure limits established.

Component	European Union	The United Kingdom	France	Spain	Germany
Methyl ethyl ketone	TWA: 200 ppm TWA: 600 mg/m^3 STEL: 900 mg/m^3 STEL: 300 ppm		VME: 200 ppm VME: 600 mg/m^3 VLCT: 300 ppm VLCT: 900 mg/m^3	VLA-EC: 300 ppm VLA-EC; 900 mg/m^3 VLA-EC VLA-ED: 200 ppm VLA-ED; 600 mg/m^3 VLA-ED	

Component	Italy	Portugal	The Netherlands	Finland	Austria
Methyl ethyl ketone	TWA: 200 ppm TWA: 600 mg/m^3 STEL: 300 ppm STEL: 900 mg/m^3	STEL: 300 ppm TWA: 200 ppm Skin notation	Skin STEL: 300 ppm STEL; 900 mg/m^3 STEL MAC: 200 ppm MAC; 590 mg/m^3 MAC	STEL: 300 mg/m^3 STEL: 100 ppm Skin	Skin STEL: 200 ppm STEL (4 X 30 min); 590 mg/m^3 STEL (4 X 30 min) MAK: 100 ppm MAK; 295 mg/m^3 MAK

Component	Switzerland	Poland	Norway	Ireland	Denmark
Methyl ethyl ketone	Skin STEL: 200 ppm STEL (15 min); 590 mg/m^3 STEL (15 min) MAK: 200 ppm MAK; 590 mg/m^3 MAK	NDSCh: 900 mg/m^3 NDS: 450 mg/m^3	TWA: 220 mg/m^3 TWA: 75 ppm	TWA: 200 ppm TWA: 600 mg/m^3 STEL: 300 ppm STEL: 900 mg/m^3 Skin	TWA: 50 ppm TWA: 145 mg/m^3 Skin

Occupational exposure controls

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location Ensure adequate ventilation, especially in confined areas Use explosion-proof electrical/ventilating/lighting/equipment

Personal Protective Equipment

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.

Eye Protection Tightly fitting safety goggles

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Hand Protection Protective gloves

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Colorless
Odor	characteristic - sweet
pH	No information available.
Vapor Pressure	105 mbar @ 20 °C
Vapor Density	2.41 (Air = 1.0)
Viscosity	0.42 mPa.s @ 15°C
Boiling Point/Range	80°C / 176°F
Melting Point/Range	-87°C / -124.6°F
Flash Point	-7°C / 19.4°F
Explosion Limits	
Lower	1.8 Vol%
Upper	11.5 Vol%
Evaporation Rate	3.7 (Butyl Acetate = 1.0)
Water Solubility	290 g/L (20°C)
Specific Gravity	0.806
Partition Coefficient (n-octanol/water)	0.29
Molecular Formula	C4 H8 O
Molecular Weight	72.11

10. STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Oxidizing agents, Strong reducing agents, Ammonia, copper, Amines

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions . None under normal processing..

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methyl ethyl ketone	2737 mg/kg (Rat)	6480 mg/kg (Rabbit)	32 g/m^3 (Mouse) 4 h

Chronic Toxicity

Carcinogenicity There are no known carcinogenic chemicals in this product

Sensitization No information available.

Neurological Effects No information available.

Mutagenic Effects Not mutagenic in AMES Test

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals.

Target Organs Skin, Eyes, Central nervous system (CNS), Liver, Kidney.

Other Adverse Effects See actual entry in RTECS for complete information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Methyl ethyl ketone		LC50= 1690 mg/L Lepomis macrochirus 96 h LC50= 3220 mg/L Pimephales promelas 96 h	EC50 = 3403 mg/L 30 min EC50 = 3426 mg/L 5 min	EC50 = 5091 mg/L 48 h EC50 = 520 mg/L 48 h

Persistence and Degradability Readily biodegradable.

Bioaccumulative Potential No information available.

Mobility No information available.

Component	log Pow
Methyl ethyl ketone	0.29

13. DISPOSAL CONSIDERATIONS

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

Contaminated Packaging Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

IMDG/IMO

UN-No	UN1193
Hazard Class	3
Packing Group	II
Proper Shipping Name	Ethyl methyl ketone (Methyl ethyl ketone)

ADR

UN-No	UN1193
Hazard Class	3
Packing Group	II
Proper Shipping Name	Ethyl methyl ketone (Methyl ethyl ketone)

IATA

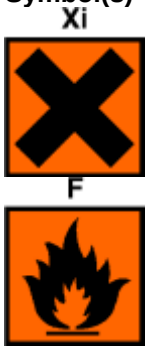
UN-No	UN1193
Hazard Class	3
Packing Group	II
Proper Shipping Name	Methyl ethyl ketone

15. REGULATORY INFORMATION

The product is classified as dangerous in accordance with Directive 1999/45/EC or 67/548/EEC

Labelling

Symbol(s) Xi - Irritant F - Highly flammable



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S -phrase(s)
S16 - Keep away from sources of ignition. No smoking
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
S37/39 - Wear suitable gloves and eye/face protection

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Methyl ethyl ketone	201-159-0	-		Present	X	-	X	X	X	X	KE-24094 X

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2-3
R11 - Highly flammable
R36 - Irritating to eyes
R66 - Repeated exposure may cause skin dryness or cracking
R67 - Vapors may cause drowsiness and dizziness

Prepared By Regulatory Affairs

Creation Date 13-Apr-2009

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Revision Summary "***", and red text indicates revision

Restrictions on use No information available.

Training advice No information available.

Literary reference No information available.

Disclaimer

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End of Safety Data Sheet