

**MITANOL C040**

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

**1.1. Product identifier**

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

**Use of the substance/mixture**

engine coolant

**Uses advised against**

No information available.

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

Company name:	MITANOL GmbH	
Street:	Industriestraße 8	
Place:	D-49577 Ankum	
Telephone:	+49 (0)5462/7470-50	Telefax: +49 (0)5462/7470-33
e-mail:	info@mitanol.de	
Internet:	www.mitanol.de	
Responsible Department:	Produktsicherheit / Product Safety sicherheitsdatenblatt@mitanol.de	

**1.4. Emergency telephone**

**number:** Gifftinformationszentrum Nord (Göttingen)

+49 (0)551/19240

**SECTION 2: Hazards identification**

**2.1. Classification of the substance or mixture**

**GB CLP Regulation**

Acute Tox. 4; H302  
Eye Irrit. 2; H319  
STOT RE 2; H373

Full text of hazard statements: see SECTION 16.

**2.2. Label elements**

**GB CLP Regulation**

**Hazard components for labelling**

Ethane-1,2-diol  
Potassium 2-ethylhexanoate

**Signal word:** Warning

**Pictograms:**



**Hazard statements**

H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

**Precautionary statements**

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash hands thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

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P337+P313  
P501

present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.  
Dispose of contents / container in accordance with official regulations.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
107-21-1	Ethane-1,2-diol			90 - 100 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
3164-85-0	Potassium 2-ethylhexanoate			1 - < 3 %
	221-625-7		01-2119980714-29	
	Repr. 2, Skin Irrit. 2, Eye Dam. 1; H361d H315 H318			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
107-21-1	203-473-3	Ethane-1,2-diol	90 - 100 %
		dermal: LD50 = > 3500 mg/kg; oral: LD50 = 7712 mg/kg	
3164-85-0	221-625-7	Potassium 2-ethylhexanoate	1 - < 3 %
		dermal: LD50 = > 2000 mg/kg; oral: LD50 = 2043 mg/kg	

**Further Information**

This mixture contains no substances of very high concern (SVHC) which are included in the Candidate List according to Article 59 of REACH.

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

Take off contaminated clothing and wash it before reuse.  
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**After inhalation**

Remove person to fresh air and keep comfortable for breathing.  
In all cases of doubt, or when symptoms persist, seek medical advice.

**After contact with skin**

After contact with skin, wash immediately with plenty of water and soap.  
In case of skin irritation, consult a physician.

**After contact with eyes**

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.  
Remove contact lenses, if present and easy to do. Continue rinsing.

**After ingestion**

Rinse mouth thoroughly with water.

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Let water be drunken in little sips (dilution effect).  
Do NOT induce vomiting.  
When in doubt or if symptoms are observed, get medical advice.

**4.2. Most important symptoms and effects, both acute and delayed**

May cause respiratory irritation. The following symptoms may occur: Cough, Dizziness, Headache  
May be absorbed through the skin. Repeated exposure may cause skin dryness or cracking.  
Causes serious eye irritation. The following symptoms may occur: erythema (redness)  
Harmful if swallowed. The following symptoms may occur: Vomiting, Unconsciousness, Nausea

**4.3. Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Use water spray jet to protect personnel and to cool endangered containers.  
Co-ordinate fire-fighting measures to the fire surroundings.  
- alcohol resistant foam  
- Extinguishing powder  
- Carbon dioxide (CO<sub>2</sub>)  
- Water mist

**Unsuitable extinguishing media**

Full water jet

**5.2. Special hazards arising from the substance or mixture**

Non-flammable. Formation of toxic gases is possible during heating or in case of fire.  
In case of fire may be liberated:  
- Carbon monoxide (CO)  
- Carbon dioxide (CO<sub>2</sub>).  
- Pyrolysis products, toxic

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.  
Suppress gases/vapours/mists with water spray jet.

**Additional information**

Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.  
Dispose of waste according to applicable legislation.

**SECTION 6: Accidental release measures**

**6.1. Personal precautions, protective equipment and emergency procedures**

**General advice**

Do not breathe gas/fumes/vapour/spray.  
Avoid contact with skin, eyes and clothes.  
Use personal protection equipment.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.  
Do not allow to enter into soil/subsoil.

**6.3. Methods and material for containment and cleaning up**

**For containment**

Stop leak if safe to do so.  
Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

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**For cleaning up**

- Collect in closed and suitable containers for disposal.
- Treat the recovered material as prescribed in the section on waste disposal.
- Clean contaminated articles and floor according to the environmental legislation.

**6.4. Reference to other sections**

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

- Always close containers tightly after the removal of product.
- Do not put any product-impregnated cleaning rags into your trouser pockets.
- Clear spills immediately.
- Use only in well-ventilated areas.

**Advice on protection against fire and explosion**

- No special fire protection measures are necessary.

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

**Requirements for storage rooms and vessels**

- Keep container tightly closed and in a well-ventilated place.
- Keep only in the original container. Store in a cool dry place.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

**Hints on joint storage**

- Do not store together with:
  - Materials capable of ignition under almost all normal temperature conditions
  - Explosives

**7.3. Specific end use(s)**

engine coolant

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

**8.1. Control parameters**

**Exposure limits (EH40)**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
107-21-1	Ethane-1,2-diol, vapour	20	52		TWA (8 h)	WEL
		40	104		STEL (15 min)	WEL

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**DNEL/DMEL values**

CAS No	Substance		
DNEL type	Exposure route	Effect	Value
107-21-1	Ethane-1,2-diol		
Worker DNEL, long-term	inhalation	local	35 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	106 mg/kg bw/day
Consumer DNEL, long-term	inhalation	local	7 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	53 mg/kg bw/day
3164-85-0	Potassium 2-ethylhexanoate		
Worker DNEL, long-term	inhalation	systemic	41,98 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	5,95 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	10,35 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	2,98 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	2,98 mg/kg bw/day

**PNEC values**

CAS No	Substance	
Environmental compartment	Value	
107-21-1	Ethane-1,2-diol	
Freshwater	10 mg/l	
Freshwater (intermittent releases)	10 mg/l	
Marine water	1 mg/l	
Freshwater sediment	37 mg/kg	
Marine sediment	3,7 mg/kg	
Micro-organisms in sewage treatment plants (STP)	199,5 mg/l	
Soil	1,53 mg/kg	
3164-85-0	Potassium 2-ethylhexanoate	
Freshwater	0,36 mg/l	
Freshwater (intermittent releases)	0,493 mg/l	
Marine water	0,036 mg/l	
Freshwater sediment	6,37 mg/kg	
Marine sediment	0,637 mg/kg	
Micro-organisms in sewage treatment plants (STP)	71,7 mg/l	
Soil	1,06 mg/kg	

**8.2. Exposure controls**

**Appropriate engineering controls**

Provide adequate ventilation as well as local exhaust at critical locations.

**Protective and hygiene measures**

Take off contaminated clothing and wash it before reuse.

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Wash hands and face before breaks and after work and take a shower if necessary.

When using do not eat, drink, smoke, sniff. Keep away from food, drink and animal feedingstuffs.

**Eye/face protection**

During filling, metering, mixing and sampling must be used:

Wear eye/face protection. EN 166

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances.

Recommended glove articles: EN ISO 374

Suitable material: NBR (Nitrile rubber)

Thickness of the glove material: 0,4 mm

Breakthrough times and swelling properties of the material must be taken into consideration. Breakthrough time: > 8h

For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

**Skin protection**

Wear suitable protective clothing. EN 14605

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection.

- Half-face mask (EN 140)

- Filter type: A/P (EN 141)

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. (EN 137)

**SECTION 9: Physical and chemical properties**

**9.1. Information on basic physical and chemical properties**

Physical state:	Liquid
Colour:	violet
Odour:	odourless
pH-Value:	7,5 - 9

**Changes in the physical state**

Melting point/freezing point:	-12 °C
Boiling point or initial boiling point and boiling range:	> 170 °C
Flash point:	> 111 °C

**Flammability**

Solid/liquid:	not applicable
Gas:	not applicable

**Explosive properties**

The product is not: Explosive.

Lower explosion limits:	not determined
Upper explosion limits:	not determined
Auto-ignition temperature:	>400 °C
Decomposition temperature:	not determined

**Oxidizing properties**

The product is not: oxidising.

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Vapour pressure: (at 20 °C)	0,08 hPa
Density (at 20 °C):	1,12 g/cm <sup>3</sup>
Water solubility:	easily soluble
<b>Solubility in other solvents</b> not determined	
Partition coefficient n-octanol/water:	No data available
Viscosity / dynamic: (at 20 °C)	23,52 mPa·s
Viscosity / kinematic: (at 20 °C)	21 mm <sup>2</sup> /s
Relative vapour density:	2,1
Evaporation rate:	not determined

**9.2. Other information**

Solid content: not determined

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

**10.2. Chemical stability**

The product is stable under storage at normal ambient temperatures.

**10.3. Possibility of hazardous reactions**

Reacts with : Oxidizing agent, Acids

**10.4. Conditions to avoid**

Avoid: Thermal decomposition

Keep away from sources of heat (e.g. hot surfaces), sparks and open flames.

Safe handling: see section 7

**10.5. Incompatible materials**

Materials to avoid:

- Oxidising agent
- Strong acid, alkalines

**10.6. Hazardous decomposition products**

Hazardous combustion products:

- Carbon monoxide (CO)
- Carbon dioxide (CO<sub>2</sub>).
- Pyrolysis products, toxic

**SECTION 11: Toxicological information**

**11.1. Information on hazard classes as defined in GB CLP Regulation**

**Acute toxicity**

Harmful if swallowed.

**ATEmix calculated**

ATE (oral) 515,4 mg/kg

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
107-21-1	Ethane-1,2-diol				
	oral	LD50 7712 mg/kg	Rat	Study report (1968)	according to BASF-internal standards
	dermal	LD50 > 3500 mg/kg	Mouse	Fundamental and Applied Toxicology 27: 1	LD50 derived from developmental toxicity
3164-85-0	Potassium 2-ethylhexanoate				
	oral	LD50 2043 mg/kg	Rat	Study report (1987)	OECD Guideline 401
	dermal	LD50 > 2000 mg/kg	Rat	Study report (1986)	OECD Guideline 402

**Irritation and corrosivity**

Causes serious eye irritation.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

**Sensitising effects**

Based on available data, the classification criteria are not met.

**Carcinogenic/mutagenic/toxic effects for reproduction**

Based on available data, the classification criteria are not met.

**STOT-single exposure**

Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure. (Ethane-1,2-diol)

**Aspiration hazard**

Based on available data, the classification criteria are not met.

**Additional information on tests**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

**11.2. Information on other hazards**

**Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**SECTION 12: Ecological information**

**12.1. Toxicity**

The product is not: Ecotoxic.



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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
107-21-1	Ethane-1,2-diol					
	Acute fish toxicity	LC50 > 72860 mg/l	96 h	Pimephales promelas	Environ. Toxicology and Chemistry, Vol.	EPA 600/4-90/027. U.S. Environmental Pro
	Acute algae toxicity	ErC50 6500 - 13000 mg/l	96 h	Pseudokirchneriella subcapitata	Study report (1982)	other: EPA 600/9-78-018, 1978
	Acute crustacea toxicity	EC50 > 100 mg/l	48 h	Daphnia magna	Study report (1998)	OECD Guideline 202
	Fish toxicity	NOEC 15380 mg/l	7 d	Pimephales promelas	Environ. Toxicology and Chemistry, Vol.	other: EPA 600/4-89/001. U.S. Environmen
	Algae toxicity	NOEC > 100 mg/l	8 d	Scenedesmus quadricauda	REACH Registration Dossier	OECD Guideline 201
	Crustacea toxicity	NOEC 7500 - 15000 mg/l	21 d	Daphnia magna	REACH Registration Dossier	other: ASTM
3164-85-0	Potassium 2-ethylhexanoate					
	Acute fish toxicity	LC50 > 100 mg/l	96 h	Oryzias latipes	NITE (National Institute of Technology a	OECD Guideline 203
	Acute algae toxicity	ErC50 49,3 mg/l	72 h	Desmodesmus subspicatus	Study report (1988)	other: Method: other: German Industrial
	Acute crustacea toxicity	EC50 910 mg/l	48 h	Daphnia magna	NITE (National Institute of Technology a	OECD Guideline 202
	Crustacea toxicity	NOEC 25 mg/l	21 d	Daphnia magna	Study report (1997)	OECD Guideline 211

**12.2. Persistence and degradability**

No information available.

**12.3. Bioaccumulative potential**
**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
107-21-1	Ethane-1,2-diol	-1,36

**BCF**

CAS No	Chemical name	BCF	Species	Source
3164-85-0	Potassium 2-ethylhexanoate	2,96		

**12.4. Mobility in soil**

No information available.

**12.5. Results of PBT and vPvB assessment**

 The substances in the mixture do not meet the PBT/vPvB criteria according to UK REACH.  
 not applicable

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

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**12.7. Other adverse effects**

No information available.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

- |  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**Inland waterways transport (ADN)**

- |  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**Marine transport (IMDG)**

- |  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**Air transport (ICAO-TI/IATA-DGR)**

- |  |  |
|--|--|
| <b>14.1. UN number:</b>                  | No dangerous good in sense of this transport regulation. |
| <b>14.2. UN proper shipping name:</b>    | No dangerous good in sense of this transport regulation. |
| <b>14.3. Transport hazard class(es):</b> | No dangerous good in sense of this transport regulation. |
| <b>14.4. Packing group:</b>              | No dangerous good in sense of this transport regulation. |

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

**14.7. Maritime transport in bulk according to IMO instruments**

No dangerous good in sense of this transport regulation.

**SECTION 15: Regulatory information**

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

**EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

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2010/75/EU (VOC): 97,01 % (1086,512 g/l)  
2004/42/EC (VOC): 97,01 % (1086,512 g/l)  
Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III)

**Additional information**

To follow: 850/2004/EC, 1107/2009/EC, 649/2012/EC

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).  
Water hazard class (D): 2 - obviously hazardous to water

**15.2. Chemical safety assessment**

Chemical safety assessments for substances in this mixture were not carried out.

**SECTION 16: Other information**

**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,3,4,5,6,7,8,9,10,11,12,13,15,16.

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container

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VOC: Volatile Organic Compounds

SVHC: Substance of Very High Concern

For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

**Classification for mixtures and used evaluation method according to GB CLP Regulation**

Classification	Classification procedure
Acute Tox. 4; H302	Calculation method
Eye Irrit. 2; H319	Calculation method
STOT RE 2; H373	Calculation method

**Relevant H and EUH statements (number and full text)**

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*