

**MITANOL C048**

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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  
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

**Signal word:** Warning

**Pictograms:**



**Hazard statements**

H302	Harmful if swallowed.
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.
P270	Do not eat, drink or smoke when using this product.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330	Rinse mouth.
P501	Dispose of contents / container in accordance with official regulations.

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**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			85 - 95 %
	203-473-3	603-027-00-1	01-2119456816-28	
	Acute Tox. 4, STOT RE 2; H302 H373			
532-32-1	Sodium benzoate			1 - < 5 %
	208-534-8		01-2119460683-35	
	Eye Irrit. 2; H319			
1332-77-0	Dipotassium tetraborate			1 - < 3 %
	215-575-5		01-2119970730-37	
	Repr. 2; H361d			

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	85 - 95 %
	dermal: LD50 = > 3500 mg/kg; oral: LD50 = 7712 mg/kg		
532-32-1	208-534-8	Sodium benzoate	1 - < 5 %
	dermal: LD50 = > 2000 mg/kg; oral: LD50 = 3450 mg/kg		
1332-77-0	215-575-5	Dipotassium tetraborate	1 - < 3 %
	inhalation: LC50 = > 2,04 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = > 2500 mg/kg Repr. 2; H361d: >= 5,2 - 100		

**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**

Provide fresh air. Call a doctor if you feel unwell.

**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.  
In all cases of doubt, or when symptoms persist, seek medical advice.

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

No information available.

**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
- Water spray jet

**Unsuitable extinguishing media**

High power 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.

**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).

**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

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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.

**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
532-32-1	Sodium benzoate		
Worker DNEL, long-term	inhalation	systemic	3 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	local	0,1 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	62,5 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	1,5 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local	0,06 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	31,25 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	16,6 mg/kg bw/day
1332-77-0	Dipotassium tetraborate		
Consumer DNEL, long-term	inhalation	systemic	3,9 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	367,7 mg/kg bw/day
Worker DNEL, long-term	inhalation	systemic	7,8 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	systemic	7,8 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	local	13,6 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	local	13,6 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	systemic	3,9 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local	13,6 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	local	13,6 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	185,6 mg/kg bw/day
Consumer DNEL, long-term	oral	systemic	0,92 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	0,92 mg/kg bw/day

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**PNEC values**

CAS No	Substance	Value
Environmental compartment		
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
532-32-1	Sodium benzoate	
Freshwater		0,13 mg/l
Freshwater (intermittent releases)		0,305 mg/l
Marine water		0,013 mg/l
Freshwater sediment		1,76 mg/kg
Marine sediment		0,176 mg/kg
Secondary poisoning		300 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		0,06 mg/kg
1332-77-0	Dipotassium tetraborate	
Freshwater		2,02 mg/l
Freshwater (intermittent releases)		13,7 mg/l
Marine water		2,02 mg/l
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		5,4 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.

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)

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Thickness of the glove material: 0,4 mm

Breakthrough times and swelling properties of the material must be taken into consideration. Breakthrough time: &gt; 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. Combination filtering device Typ: A-P2 (EN 14387)

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	Liquid	
Colour:	greenish blue	
Odour:	odourless	
pH-Value:		not determined

**Changes in the physical state**

Boiling point or initial boiling point and boiling range: 160-200 °C

Flash point: &gt; 120 °C

**Flammability**

Solid/liquid:	not applicable
Gas:	not applicable

Lower explosion limits: not determined

Upper explosion limits: not determined

**Self-ignition temperature**

Solid:	not applicable
Gas:	not applicable

Decomposition temperature: not determined

**Oxidizing properties**

Not oxidising.

Vapour pressure: <0,000 01 hPa  
(at 20 °C)Density (at 15 °C): 1,127 g/cm<sup>3</sup>

Water solubility: miscible

**Solubility in other solvents**

Miscible with: Acetone

Partition coefficient n-octanol/water: not determined

Relative vapour density: not determined

Evaporation rate: not determined

**9.2. Other information**

Solid content: not determined

**SECTION 10: Stability and reactivity**

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**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**

No known hazardous reactions.

**10.4. Conditions to avoid**

Avoid: Thermal decomposition

**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) 526,3 mg/kg

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
107-21-1	Ethane-1,2-diol				
	oral	LD50 mg/kg	7712	Rat	Study report (1968) according to BASF-internal standards
	dermal	LD50 mg/kg	> 3500	Mouse	Fundamental and Applied Toxicology 27: 1 LD50 derived from developmental toxicity
532-32-1	Sodium benzoate				
	oral	LD50 mg/kg	3450	Rat	Publication (1953) Study predates approved guidelines. Unfa
	dermal	LD50 mg/kg	> 2000	Rabbit	Study report (1974) 4 rabbits were dermally exposed
1332-77-0	Dipotassium tetraborate				
	oral	LD50 mg/kg	> 2500	Rat	Study report (1996) OECD Guideline 401
	dermal	LD50 mg/kg	> 2000	Rabbit	Study report (1985) other: This study was carried out to com
	inhalation (4 h) dust/mist	LC50 mg/l	> 2,04	Rat	Study report (1994) OECD Guideline 403

**Irritation and corrosivity**

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



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**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**

No information available.

**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
532-32-1	Sodium benzoate					
	Acute fish toxicity	LC50 484 mg/l	96 h	Pimephales promelas	Vol. 2: 139-140. University of Wisconsin	EPA OPP 72-1
	Acute algae toxicity	ErC50 > 30,5 mg/l	72 h	Raphidocelis subcapitata	Study report (2010)	OECD Guideline 201
1332-77-0	Dipotassium tetraborate					
	Acute fish toxicity	LC50 74 mg/l	96 h	Limanda limanda	Publication (1985)	The acute toxicity of boron has been stu
	Acute algae toxicity	ErC50 66 mg/l	72 h	Phaeodactylum tricorutum	Study report (2011)	ISO 10253
	Acute crustacea toxicity	EC50 133 mg/l	48 h	Daphnia magna	Environ. Toxicol. Chem., 3, #1, 89-94 (1)	other: ASTM Standard E 729-80
	Fish toxicity	NOEC 5,6 mg/l	34 d	Danio rerio	Study report (2000)	OECD Guideline 210
	Algae toxicity	NOEC >= 100 mg/l	10 d	Agmenellum quadruplicatum	J. Fish. Res. Board Can., 32, #12, 2487-	Axenic cultures of 19 species were chose
	Crustacea toxicity	NOEC 33,1 mg/l	28 d	Americamysis bahia	Study report (2011)	EPA OPPTS 850.1350
	Acute bacteria toxicity	(EC50 > 175 mg/l)	3 h	Activated sludge	Study report (2000)	OECD Guideline 209

**12.2. Persistence and degradability**

The product has not been tested.

**12.3. Bioaccumulative potential**

The product has not been tested.

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**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
107-21-1	Ethane-1,2-diol	-1,36
532-32-1	Sodium benzoate	1,88

**BCF**

CAS No	Chemical name	BCF	Species	Source
1332-77-0	Dipotassium tetraborate	0,558	Oncorhynchus nerka	Water Research Vol.

**12.4. Mobility in soil**

The product has not been tested.

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

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

The product has not been tested.

**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.

**12.7. Other adverse effects**

No information available.

**Further information**

Avoid release to the environment.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

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

**Contaminated packaging**

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

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

**Inland waterways transport (ADN)**

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

**Marine transport (IMDG)**

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

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

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

2004/42/EC (VOC): 99,99 % (1126,887 g/l)

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 1 - slightly 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): 1,2,4,5,6,7,8,9,10,11,15.

**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%

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

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

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

- H302 Harmful if swallowed.  
 H319 Causes serious eye irritation.  
 H361d Suspected of damaging the unborn child.

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H373 May cause damage to organs through prolonged or repeated exposure.

**Further Information**

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

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