



SAFETY DATA SHEET

Prepared according to Annex II of EC Regulation 1907/2006

MANNOL AIR BRAKE ANTIFREEZE

01. Identification of the substance/preparation and of the company/undertaking

Product name

MANNOL AIR BRAKE ANTIFREEZE

Use of the substance / preparation

additive

Manufacturer/Supplier

SCT-Vertriebs GmbH
Wedel/Hamburg

Street/P.O.Box

Feldstrasse 154

Country code/Postal code/Town/City

22880 Wedel

Contact

email: info@sct-germany.de

Emergency information

+49 4103 1211 0 (08:00 - 17:00 h)

02. Composition/information on ingredients

Hazardous components

Hazardous ingredients	CAS No. EINEC No.	Conc. in %	Hazard symbol	Risks (R-phrases)
Ethanol	64-17-5	99.85	F	11

03. Hazard identification

- Toxic by inhalation, in contact with skin and if swallowed
- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
- Highly flammable
- May build up electrostatic charges: risk of ignition
- Vapour-air mixture is flammable/explosive within the explosion limits

04. First-aid measures

General

Unconsciousness: lateral position - call a physician.

After inhalation

Remove concerned person out of danger area. Let in fresh air.

After skin contact

Wash away with soap and water and rinse.

After eye contact

Flush with plenty of water (10 - 15 min.). Call a physician.

After ingestion

Drink plenty of water. Do not induce vomiting - call a physician.

05. Fire-fighting measures

Suitable extinguishing media

- Small fires: Powder, carbon dioxide, halon, water spray, Standard foam
- Large fires: Water spray, AFFF(R)(Aqueous Film Forming Foam (alcohol resistant)) type with either a 3% or 6% foam proportioning system

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05. Unsuitable extinguishing media

Waterjet.

Special protective equipment

When extinguishing fires, use breathing apparatus with an independent source of air.

Additional information

Cool endangered containers with water in case of fire. Do not allow the quenching water into the sewage system.

06. Accidental release measures

Personal precautions

Keep away from ignition sources on account of the organic solvent content and air room well. Do not inhale vapours. Take the precautions customary when handling chemicals.

Environmental precautions

- Prevent soil and water pollution
- Substance must not be discharged into the sewer
- Plug the leak, cut off the supply
- Dam up the liquid spill
- Try to reduce evaporation
- Recover methanol or dilute with water to reduce fire hazard

Methods for cleaning up/collecting

- Eliminate all ignition sources
- Fluorocarbon alcohol resistant foams may be applied to spill to diminish vapour and fire hazard
- Maximize methanol recovery for recycling or reuse
- Collect liquid with explosion proof pumps
- For small spills: take up into non-combustible sorbent

07. Handling and storage

Information for safe handling

- Reduce/avoid exposure and/or contact
- Keep container tightly closed
- No smoking or open flame
- Use spark-/explosionproof appliances and lighting system
- Take precautions against electrostatic charges
- Handle uncleaned empty containers as full ones

Information about protection against explosions and fires

Take precautionary measures against static discharges.

Requirements to be met by storerooms and containers

- Keep away from heat- en ignition sources, oxidizers, acids, bases
- Store in a dry and well-ventilated area
- Store in totally enclose equipment
- Tanks must be grounded and vented and should have vapour emission controls
- Provide for a tub to collect spills

Further information about storage conditions

- Anhydrous methanol is non-corrosive to most metals at ambient temperatures except lead and magnesium
- Coatings of copper (or copper alloys), zinc (including galvanized steel) or aluminium are unsuitable for storage as they are attacked slowly
- Mild steel is the recommended construction material for tanks

08. Exposure controls/personal protection

Personal protective equipment

Respiratory protection

None, but avoid breathing vapours if possible. If workplace limits are exceeded, a gas mask approved for this purpose must be worn. Combination filter mask A2 - P2 for short-term work.

Hand protection

Solvent-resistant protective gloves must be worn. Gloves, for example PVC at least 0,8 mm thick. See protective gloves instruction sheet.

Eye protection

Use safety glasses.

09. Physical and chemical properties

Image

Appearance (at 20°C) : Clear liquid
Odour : Slight alcohol odour
Colour : Colourless

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09. Important health, safety and environmental information:

pH value : N.D.
Boiling point/boiling range : 64.5 °C
Flashpoint : 11 °C (TCC)
Explosion limits : 6 - 36 vol%
Vapour pressure (at 20°C) : 127 hPa
Vapour pressure (at 50°C) : 535 hPa
Relative density (at 20°C) : 0.792
Water solubility : COMPLETE
Melting point/melting range : -97.8 °C
Auto-ignition point : 385 °C
Saturation concentration : 166 g/m³

Soluble in : Ethanol, ether, acetone, chloroform
Relative vapour density : 1.1
Viscosity : 0.0006 Pa.s
Partition coefficient n-octanol/water : -0.82/-0.66
Evaporation rate
ratio to butyl acetate : 5.9
ratio to ether : 5.3

10. Stability and reactivity

Conditions to avoid

Stable under normal conditions

Materials to avoid

Reaction with oxidizing agents possible.

Hazardous decomposition products

- Reaction with oxidizers, strong acids, strong bases
- May be corrosive to lead and aluminium
- Hazardous decomposition products: formaldehyde, carbon dioxide and carbon monoxide

11. Toxicological information

LD50 oral rat : 5628 mg/kg
LD50 dermal rabbit : N.D. mg/kg
LD50 dermal rabbit : 15800 mg/kg
LC50 inhalation rat : 85 mg/l/4 h
LC50 inhalation rat : 64000 ppm/4 h

The odour threshold of methanol is several times higher than the TLV-TWA

Routes of Exposure

swallowed, inhalation, eye and skin

Acute effects and symptoms

- Swallowing even small amounts of methanol may cause blindness or death
- Effects of sub lethal doses may be nausea, headache, abdominal pain, vomiting and visual disturbances ranging from blurred vision to light sensitivity
- Inhalation of high concentrations: irritation of the mucous membranes, headache, sleepiness, nausea, confusion, loss of consciousness, digestive and visual disturbances and death
- High vapour concentration or contact with liquid: irritation of the eyes, tearing and burning
- May be absorbed through the skin in toxic or lethal amounts

Acute effects and symptoms

- Repeated exposure by inhalation or absorption: systemic poisoning, brain disorders, impaired vision and blindness
- Inhalation may worsen conditions such as emphysema or bronchitis
- Repeated skin contact may cause dermal irritation, dryness and cracking

12. Ecological information

Acute effects and symptoms

- LC50 (96 h) : 10800 mg/l (SALMO GAIARDNERI/ONCORHYNCHUS MYKISS)
- EC50 (48 h) : 24500 mg/l (DAPHNIA MAGNA)
- EC50 (72 h) : 8000 mg/l (ALGAE)

Methanol can be harmful for as well salt water organisms as freshwater organisms

Mobility

- Volatile organic compounds (VOC): 100%
 - Soluble in water
 - Readily biodegradable in water (test: 99% OECD 301D. BOD 80% ThOD)
- For other physicochemical properties see section 9

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12. Persistence and degradability

- biodegradation BOD5 : 0.6 - 1.1 g O₂/g substance
COD : 1.42 g O₂/g substance
- water :
- soil : N.D.
- Methanol will be broken down to carbon dioxide and water

Bioaccumulative potential

- log Pow : -0.82/-0.66
- BCF : < 10 (LEUCISCUS IDUS)
- Slightly bioaccumulative

Other adverse effects

- WGK : 1 (Classification in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- Effect on the ozone layer : Not dangerous for the ozone layer (Council Regulation (EC) No. 3093/94, O.J. L333 of 22/12/94)
- Greenhouse effect : No data available
- Effect on waste water purification : Sludge digestion is inhibited at 800 mg/l
Nitrification of activated sludge is inhibited at 160 mg/l; 50%

13. Disposal considerations

Provisions relating to waste

- Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 07 01 04* (other organic solvents, washing liquids and mother liquors)
- Hazardous waste (91/689/EEC)

Disposal methods

- Incineration is the recommended disposal method
- Biological treatment may be used on dilute aqueous waste methanol
- Methanol wastes are not suitable for underground injection
- Waste materials must be disposed of in accordance with your municipal, state, provincial and federal regulations

Packaging

- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10* (packaging containing residues of or contaminated by dangerous substances)

14. Transport information

336
1230

Classification of the substance in compliance with UN Recommendations

UN-number : 1230
CLASS : 3
SUB RISKS : 6.1
PACKING GROUP : II
PROPER SHIPPING NAME : UN 1230, Ethanol

ADR (transport by road)

CLASS : 3
PACKING GROUP : II
DANGER LABEL TANKS : 3+6.1
DANGER LABEL PACKAGES : 3+6.1
HAZCHEM : 2WE

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14. RID (transport by rail)

CLASS : 3

PACKING GROUP : II

DANGER LABEL TANKS : 3+6.1

DANGER LABEL PACKAGES : 3+6.1

ADNR (transport by inland waterways)

CLASS : 3

PACKING GROUP : II

DANGER LABEL TANKS : 3+6.1

DANGER LABEL PACKAGES : 3+6.1

IMDG (maritime transport)

CLASS : 3

SUB RISKS : 6.1

PACKING GROUP : II

MFAG : 19

EMS : F-E, S-D

MARINE POLLUTANT : -

ICAO (air transport)

CLASS : 3

SUB RISKS : 6.1

PACKING : II

PACKING INSTRUCTIONS PASSENGER AIRCRAFT : 305/Y305

PACKING INSTRUCTIONS CARGO AIRCRAFT : 307

Limited quantities (LQ)

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, **only** the following prescriptions shall be complied with:

each package shall display a diamond-shaped figure with the following inscription:

- 'UN 1230'

or, in the case of different goods with different identification numbers within a single package:

- the letters 'LQ'

15. Regulatory information

Enumerated in substance list Annex I of directive 67/548/EEC



highly flammable

R11 : Highly flammable

S(01/02) : (Keep locked up and out of reach of children)

S07 : Keep container tightly closed

S16 : Keep away from sources of ignition - No smoking



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16. Other information

The information provided on this MSDS 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 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.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
* = INTERNAL CLASSIFICATION

Full text of any R-phrases referred to under heading 2:

R11 : Highly flammable

Exposure limits:

TLV : Threshold Limit Value - ACGIH US
OES : Occupational Exposure Standards - United Kingdom
MEL : Maximum Exposure Limits - United Kingdom
MAK : Maximale Arbeitsplatzkonzentrationen - Germany
TRK : Technische Richtkonzentrationen - Germany
MAC : Maximale aanvaarde concentratie - the Netherlands
VME : Valeurs limites de Moyenne d'Exposition - France
VLE : Valeurs limites d'Exposition à court terme - France
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium
GWK : Grenswaarde kortstondige blootstelling - Belgium
EC : Indicative occupational exposure limit values - directive 2000/39/EC

NOTE TO PHYSICIAN

Acute exposure to methanol, either through ingestion or breathing high airborne concentrations can result in symptoms appearing between 40 minutes and 72 hours after exposure. Symptoms and signs are usually limited to CNS, eyes and gastrointestinal tract. Because of the initial CNS's effects of headache, vertigo, lethargy and confusion, there may be an impression of ethanol intoxication. Blurred vision, decreased acuity and photophobia are common complaints. Treatment with ipecac or lavage is indicated in any patient presenting the symptoms within two hours of ingestion. A profound metabolic acidosis occurs in severe poisoning and serum bicarbonate levels are a more accurate measure of severity than serum methanol levels. Treatment protocols are available from most major hospitals and early collaboration with appropriate hospitals is recommended.