

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name

**Formaldehyde, 37% w/w in aqueous solution**

Stock number:

A16163

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

Identified use:

SU24 Scientific research and development

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

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
A Johnson Matthey Company  
Zeppelinstr. 7b  
76185 Karlsruhe / Germany  
Tel: +49 (0) 721 84007 280  
Fax: +49 (0) 721 84007 300  
Email: tech@alfa.com  
www.alfa.com

Informing department:

Product safety Tel + +049 (0) 7275 988687-0

**1.4 Emergency telephone number:**

Carechem 24: +44 (0) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture**

Classification according to Regulation (EC) No 1272/2008



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS06 skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H311 Toxic in contact with skin.

Acute Tox. 3 H331 Toxic if inhaled.



GHS08 health hazard

Carc. 2 H351 Suspected of causing cancer.

STOT SE 2 H371 May cause damage to organs.



GHS05 corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

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

T; Toxic

R23/24/25-39/23/24/25: 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.



C; Corrosive

R34: Causes burns.



Xn; Harmful

R40: Limited evidence of a carcinogenic effect.



Xi; Irritant

R37: Irritating to respiratory system.



Xi; Sensitising

R43: May cause sensitisation by skin contact.

**Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

**Other hazards that do not result in classification**

No information known.

**2.2 Label elements****Labelling according to Regulation (EC) No 1272/2008**

Hazard pictograms

The product is classified and labelled according to the CLP regulation.

Signal word

GHS02, GHS05, GHS06, GHS08  
Danger**Hazard-determining components of labelling:**

Formaldehyde

Methanol

**Hazard statements**

H226 Flammable liquid and vapour.

H301 Toxic if swallowed.

H311 Toxic in contact with skin.

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H351 Suspected of causing cancer.

H371 May cause damage to organs.

**Precautionary statements**

P210

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P301+P310

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P303+P361+P353

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P361

Remove/Take off immediately all contaminated clothing.

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/national/international regulations.

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**2.3 Other hazards****Results of PBT and vPvB assessment**

PBT: Not applicable.  
vPvB: Not applicable.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures****Dangerous components:**

CAS: 50-00-0 EINECS: 200-001-8	Formaldehyde T R23/24/25; C R34; Xn R40; Xi R43 Carc. Cat. 3 Flam. Liq. 3, H226; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Carc. 2, H351; Skin Corr. 1B, H314; Skin Sens. 1, H317	37,0%
CAS: 67-56-1 EINECS: 200-659-6	Methanol T R23/24/25-39/23/24/25; F R11 Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370	8,0%

**Additional information** None known.

**Non-Hazardous Ingredients**

CAS: 7732-18-5 EINECS: 231-791-2	Water	55,0%
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**SECTION 4: First aid measures****4.1 Description of first aid measures****General information**

Instantly remove any clothing soiled by the product.  
Remove breathing apparatus only after soiled clothing has been completely removed.  
In case of irregular breathing or respiratory arrest provide artificial respiration.

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

**After skin contact**

Seek immediate medical advice.  
Instantly wash with water and soap and rinse thoroughly.

**After eye contact**

Seek immediate medical advice.  
Rinse opened eye for several minutes under running water. Then consult doctor.

**After swallowing**

Do not induce vomiting; instantly call for medical help.

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

No further relevant information available.

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

No further relevant information available.

**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing agents**

CO<sub>2</sub>, sand, extinguishing powder. Do not use water.

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

If this product is involved in a fire, the following can be released:  
Carbon monoxide and carbon dioxide

**5.3 Advice for firefighters****Protective equipment:**

Wear self-contained breathing apparatus.  
Wear full protective suit.

**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.  
Ensure adequate ventilation

**6.2 Environmental precautions:**

Keep away from ignition sources  
Do not allow material to be released to the environment without proper governmental permits.  
Do not allow product to reach sewage system or water bodies.  
Do not allow to enter the ground/soil.

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

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Use neutralizing agent.

**Prevention of secondary hazards:**

Dispose of contaminated material as waste according to item 13.

**6.4 Reference to other sections**

Ensure adequate ventilation.  
No special measures required.  
See Section 7 for information on safe handling  
See section 8 for information on personal protection equipment.  
See Section 13 for information on disposal.

**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Keep containers tightly sealed.  
Store in cool, dry place in tightly closed containers.  
Ensure good ventilation/exhaustion at the workplace.  
Open and handle container with care.

**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

**7.2 Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and containers:  
Information about storage in one common storage facility:**

No special requirements.

**Further information about storage conditions:**

Store away from oxidizing agents.  
Water reacts with many metals to give hydrogen, often violently. Water also reacts violently with many reactive organic and inorganic chemicals.

**7.3 Specific end use(s)**

Keep container tightly sealed.  
Store in cool, dry conditions in well sealed containers.  
Store in a locked cabinet or with access restricted to technical experts or their assistants.  
No further relevant information available.

**SECTION 8: Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

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**8.1 Control parameters****Components with critical values that require monitoring at the workplace:****50-00-0 Formaldehyde (37,0%)**

MAK (Germany)	0,37 mg/m <sup>3</sup> , 0,3 ppm
MAK (TRGS 900) (Germany)	0,62 mg/m <sup>3</sup> , 0,5 ppm Y,H; DFG
PEL (USA)	Short-term value: 2 ppm Long-term value: 0,75 ppm see 29 CFR 1910,1048(c)
REL (USA)	Short-term value: C 0,1* ppm Long-term value: 0,016 ppm *15-min; See Pocket Guide App. A
TLV (USA)	Short-term value: C 0,37 mg/m <sup>3</sup> , C 0,3 ppm SEN

**67-56-1 Methanol (8,0%)**

AGW (Germany)	270 mg/m <sup>3</sup> , 200 ppm 4(II);DFG, EU, H, Y
PEL (USA)	260 mg/m <sup>3</sup> , 200 ppm
REL (USA)	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV (USA)	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI

**Ingredients with biological limit values:****67-56-1 Methanol (8,0%)**

BGW (Germany)	30 mg/l U c,b Methanol
BEI (USA)	15 mg/L urine end of shift Methanol (background, nonspecific)

**Additional information:** No data**8.2 Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.  
Keep away from foodstuffs, beverages and food.  
Instantly remove any soiled and impregnated garments.  
Wash hands during breaks and at the end of the work.  
Store protective clothing separately.  
Do not inhale gases / fumes / aerosols.  
Avoid contact with the eyes and skin.  
Maintain an ergonomically appropriate working environment.  
Use self-contained respiratory protective device in emergency situations.  
Check protective gloves prior to each use for their proper condition.  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Breathing equipment:**  
**Protection of hands:**  
Impervious gloves  
Not determined

**Material of gloves**  
**Penetration time of glove material**  
**Eye protection:**  
Tightly sealed safety glasses.  
Full face protection

**Body protection:**  
Protective work clothing.

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

Form:	Liquid
Colour:	Colourless
Smell:	Pungent
Odour threshold:	Not determined.

**pH-value:** Not determined.**Change in condition**

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	97 °C
Sublimation temperature / start:	Not determined

Flash point:	60 °C
Inflammability (solid, gaseous)	Not applicable.
Ignition temperature:	455 °C
Decomposition temperature:	Not determined
Self-inflammability:	Product is not selfigniting.

**Danger of explosion:** Product is not explosive.**Critical values for explosion:**

Lower:	7,0 Vol %
Upper:	73,0 Vol %
Steam pressure at 20 °C:	23 hPa
Density at 20 °C	1,083 g/cm <sup>3</sup>
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
dynamic:	Not determined.
kinematic:	Not determined.

**Solvent content:****Organic solvents:** 45,0 %(Contd. on page 4)  
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**9.2 Other information** No further relevant information available.

**SECTION 10: Stability and reactivity**

**10.1 Reactivity** No information known.  
**10.2 Chemical stability** Stable under recommended storage conditions.  
**Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.  
**10.3 Possibility of hazardous reactions** Water reacts violently with alkali metals.  
 Reacts with alkaline earth metals  
**10.5 Incompatible materials:** Oxidizing agents  
 Water reacts with many metals to give hydrogen, often violently. Water is also incompatible with many reactive organic and inorganic chemicals.  
**10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

**SECTION 11: Toxicological information**

**11.1 Information on toxicological effects**  
**Acute toxicity:** Danger by skin resorption.  
 Fatal if inhaled.  
 Toxic in contact with skin.  
 Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.  
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

**LD/LC50 values that are relevant for classification:****50-00-0 Formaldehyde**

Oral	LD50	42 mg/kg (mouse) 100 mg/kg (rat)
Inhalative	LC50	203 mg/m <sup>3</sup> (rat)
	LC50/4H	454 mg/m <sup>3</sup> /4H (mouse)

**67-56-1 Methanol**

Oral	LD50	14200 mg/kg (rabbit)
Inhalative	LC50/6H	41000 ppm/6H (mouse)

**Skin irritation or corrosion:** Causes severe skin burns.  
**Eye irritation or corrosion:** Causes serious eye damage.  
**Sensitization:** May cause an allergic skin reaction.  
**Germ cell mutagenicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product.  
**Carcinogenicity:** Suspected of causing cancer.  
 IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.  
 EPA-B1: Probable human carcinogen, limited evidence of carcinogenicity from epidemiologic studies.  
 Carcinogen as defined by OSHA.  
 ACGIH A2: Suspected human carcinogen: Agent is carcinogenic in experimental animals at dose levels, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.  
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product.  
 The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.  
**Reproductive toxicity:**  
**Specific target organ system toxicity - repeated exposure:** No effects known.  
**Specific target organ system toxicity - single exposure:** Causes damage to organs.  
 May cause respiratory irritation.  
**Aspiration hazard:** No effects known.  
**Experience with humans:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product.  
**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
 Toxic in contact with skin.  
 The product shows the following dangers according to the calculation method of the General EC Classification Guidelines for Preparations as issued in the latest version:  
 Toxic  
 Corrosive  
 Irritant

**SECTION 12: Ecological information**

**12.1 Toxicity** No further relevant information available.  
**Aquatic toxicity:** No further relevant information available.  
**12.2 Persistence and degradability** No further relevant information available.  
**12.3 Bioaccumulative potential** No further relevant information available.  
**12.4 Mobility in soil** No further relevant information available.

**Additional ecological information:**

**General notes:** Do not allow product to reach ground water, water bodies or sewage system.  
 Do not allow material to be released to the environment without proper governmental permits.  
 Water hazard class 2 (Self-assessment): hazardous for water.  
 Danger to drinking water if even small quantities leak into soil.  
 Avoid transfer into the environment.

**12.5 Results of PBT and vPvB assessment**

**PBT:** Not applicable.  
**vPvB:** Not applicable.  
**12.6 Other adverse effects** No further relevant information available.

**SECTION 13: Disposal considerations**





**13.1 Waste treatment methods**  
**Recommendation** Hand over to disposers of hazardous waste.  
 Must be specially treated under adherence to official regulations.  
 Consult state, local or national regulations for proper disposal.

**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.  
**Recommended cleaning agent:** Water, if necessary with cleaning agent.

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**SECTION 14: Transport information**

<b>UN-Number ADR, IMDG, IATA</b>	UN1198
<b>14.2 UN proper shipping name ADR IMDG, IATA</b>	1198 FORMALDEHYDE SOLUTION, FLAMMABLE FORMALDEHYDE SOLUTION, FLAMMABLE
<b>14.3 Transport hazard class(es) ADR</b>	
	
	
<b>Class Label IMDG, IATA</b>	3 (FC) Flammable liquids. 3+8
	
	
<b>Class Label</b>	3 Flammable liquids. 3+8
<b>Packing group ADR, IMDG, IATA</b>	III
<b>14.5 Environmental hazards: Marine pollutant:</b>	No
<b>14.6 Special precautions for user Kemler Number:</b>	Warning: Flammable liquids. 38
<b>14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	
<b>ADR Excepted quantities (EQ): Limited quantities (LQ) Transport category Tunnel restriction code</b>	E1 5L 3 D/E
<b>UN "Model Regulation":</b>	UN1198, FORMALDEHYDE SOLUTION, FLAMMABLE, 3 (8), III

**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****Australian Inventory of Chemical Substances**

All ingredients are listed.

**Standard for the Uniform Scheduling of Drugs and Poisons**

50-00-0	Formaldehyde	S2 +APPENDIX
67-56-1	Methanol	S5, S6

**National regulations****Information about limitation of use:**

Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.  
Not applicable

**Classification according to VbF:****Technical instructions (air):**

Class	Share in %
Wasser	55,0
I	45,0

**Water hazard class:**

Water hazard class 2 (Self-assessment): hazardous for water.

**Other regulations, limitations and prohibitive regulations****ELINCS (European List of Notified Chemical Substances)**

None of the ingredients is listed.

**Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients are listed.

**REACH - Pre-registered substances**

All ingredients are listed.

**15.2 Chemical safety assessment:**

A Chemical Safety Assessment has not been carried out.

**SECTION 16: Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Relevant phrases**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.
H370	Causes damage to organs.
R11	Highly flammable.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R40	Limited evidence of a carcinogenic effect.
R43	May cause sensitisation by skin contact.

**Department issuing data specification sheet:**

Health, Safety and Environmental Department.

**Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organization  
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

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**Safety data sheet**  
according to 1907/2006/EC, Article 31

Printing date 01.07.2013

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**Trade name Formaldehyde, 37% w/w in aqueous solution**

GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent

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