

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 02.08.2010

Revision: 02.08.2010

1 Identification of substance

Product details

Trade name

2-Methylbutyryl chloride

Stock number:

B22599

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG
Benzstrasse 3
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz
www.giftinfo.uni-mainz.de Telefon: +49(0)6131/19240

2 Hazards identification

Hazard designation:

C Corrosive
F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.
R 34 Causes burns.

GHS label elements

**Danger**

H225 - Highly flammable liquid and vapour.

**Danger**

Prevention:

H314 - Causes severe skin burns and eye damage.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P241 Use explosion-proof electrical/ventilating/lighting/equipment.

Response:

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.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/information on ingredients

Chemical characterization:

Designation: (CAS#)

2-Methylbutyryl chloride (CAS# 57526-28-0): 100%

Identification number(s):

EINECS Number:

201-194-1

4 First aid measures

General information

After inhalation

Instantly remove any clothing soiled by the product.
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

Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

CO₂, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents

Water.

Special hazards caused by the material, its products of combustion or flue gases:

Can be released in case of fire:
Hydrogen chloride (HCl)
Carbon monoxide and carbon dioxide
Wear self-contained breathing apparatus.
Wear full protective suit.

Protective equipment:

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Measures for cleaning/collecting:

Ensure adequate ventilation
Keep away from ignition sources
Do not allow material to be released to the environment without proper governmental permits.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose of contaminated material as waste according to item 13.
Ensure adequate ventilation.
Keep away from ignition sources.
See Section 7 for information on safe handling
See section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

Additional information:

7 Handling and storage

Handling

Information for safe handling:

Handle under dry protective gas.
Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and containers:

Information about storage in one common storage facility:

Store in cool location.

Store away from strong bases.
Store away from oxidizing agents.
Store away from water.(Contd. on page 2)
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Trade name **2-Methylbutyryl chloride****Further information about storage conditions:**

Store under dry inert gas.
 This product is moisture sensitive.
 Keep container tightly sealed.
 Store in cool, dry conditions in well sealed containers.
 Protect from humidity and keep away from water.
 Store in a locked cabinet or with access restricted to technical experts or their assistants.

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8 Exposure controls and 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.

Components with critical values that require monitoring at the workplace:

Not required.

Additional information:

No data

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.
 Do not inhale gases / fumes / aerosols.
 Avoid contact with the eyes and skin.

Breathing equipment:

Use breathing protection with high concentrations.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Material of gloves

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.

Eye protection:

Face protection
 Safety glasses
 Tightly sealed safety glasses.
 Full face protection
 Protective work clothing.

Body protection:**9 Physical and chemical properties:****General Information**

Form: Liquid
Colour: Colourless
Smell: Acrid

Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: 116-117°C
Sublimation temperature / start: Not determined

Flash point: 20°C

Ignition temperature: Not determined

Decomposition temperature: Not determined

Critical values for explosion:

Lower: Not determined
Upper: Not determined

Steam pressure: Not determined

Density at 20°C 0.98 g/cm³

Solubility in / Miscibility with Water: Reacts

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents
 Bases
 Water/moisture
 Alcohols
 Amines
 Active metals

Dangerous reactions:

No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide
 Hydrogen chloride (HCl)

11 Toxicological information**Acute toxicity:****Primary irritant effect:**

Strong corrosive effect on skin and mucous membranes.

on the skin:

Strong corrosive effect.

on the eye:

No sensitizing effect known.

Sensitization:**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
 Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
 No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**Additional ecological information:****General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water.
 Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
 Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Hand over to disposers of hazardous waste.
 Must be specially treated under adherence to official regulations.

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Trade name **2-Methylbutyryl chloride**

Consult state, local or national regulations for proper disposal.

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Uncleaned packagings:
Recommendation:

Disposal must be made according to official regulations.

14 Transport information

Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)



ADR/RID-GGVS/E Class: 3 (FC) Flammable liquids.
 Kemler Number: 338
 UN-Number: 2924
 Packaging group: II
 Label: 3+8
 Designation of goods: 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (2-Methylbutyryl chloride)
 Limited quantities (LQ): LQ4
 Transport category: 2
 Tunnel restriction code: D/E

Maritime transport IMDG/GGVSea:



IMDG/GGVSea Class: 3
 UN Number: 2924
 Label: 3+8
 Packaging group: II
 Marine pollutant: No
 Correct technical name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (2-Methylbutyryl chloride)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3
 UN/ID Number: 2924
 Label: 3+8
 Packaging group: II
 Correct technical name: FLAMMABLE LIQUID, CORROSIVE, N.O.S. (2-Methylbutyryl chloride)

UN "Model Regulation":

UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S., 3 (8), II

15 Regulatory information

Designation according to EC guidelines:

Code letter and hazard designation of product:



C Corrosive
F Highly flammable

Risk phrases:

11 Highly flammable.
34 Causes burns.

Safety phrases:

16 Keep away from sources of ignition - No smoking.
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.
For use only by technically qualified individuals.

Water hazard class:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

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.

Department issuing data specification sheet: Health, Safety and Environmental Department.

Contact: Zachariah Holt

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)
 RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 ICAO: International Civil Aviation Organization
 ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)