acc. to Safe Work Australia - Code of Practice

2-Methylimidazole ≥98 %, for synthesis

article number: 1C4A date of compilation: 2020-05-28 Version: GHS 3.0 en Revision: 2024-03-01

Replaces version of: 2022-03-09

Version: (GHS 2)

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

Product identifier 1.1

Identification of the substance **2-Methylimidazole** ≥98 %, for synthesis

Article number 1C4A CAS number 693-98-1

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

Relevant identified uses: Laboratory and analytical use

Laboratory chemical

Uses advised against: Do not use for products which come into direct

contact with the skin. Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Food, drink

and animal feedingstuffs.

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG Schoemperlenstr. 3-5 D-76185 Karlsruhe Germany

Telephone:+49 (0) 721 - 56 06 0 **Telefax:** +49 (0) 721 - 56 06 149 e-mail: sicherheit@carlroth.de Website: www.carlroth.de

Competent person responsible for the safety data
Department Health, Safety and Environment

sicherheit@carlroth.de e-mail (competent person):

1.4 **Emergency telephone number**

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 West- mead, NSW	131126	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.10	Acute toxicity (oral)	4	Acute Tox. 4	H302
3.2	Skin corrosion/irritation	1C	Skin Corr. 1C	H314
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318

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Section	Hazard class	Cat- egory	Hazard class and category	Hazard statement
3.6	Carcinogenicity	2	Carc. 2	H351
3.7	Reproductive toxicity	1B	Repr. 1B	H360Df

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis.

2.2 Label elements

Labelling

Signal word Danger

Pictograms

GHS05, GHS07, GHS08



Hazard statements

H302 Harmful if swallowed

H314 Causes severe skin burns and eye damage

H351 Suspected of causing cancer

H360Df May damage the unborn child. Suspected of damaging fertility

Precautionary statements

Precautionary statements - prevention

P260 Do not breathe dusts or mists P280 Wear eye protection/face protection

Precautionary statements - response

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin

with water or 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

P321 Specific treatment (see on this label)

Precautionary statements - disposal

P501 Dispose of contents/container to industrial combustion plant

For professional users only

2.3 Other hazards

Results of PBT and vPvB assessment

According to the results of its assessment, this substance is not a PBT or a vPvB.

Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

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SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance 2-Methylimidazole

Molecular formula $C_4H_6N_2$

Molar mass 82.11 g/_{mol}

CAS No 693-98-1

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off immediately all contaminated clothing. Self-protection of the first aider.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye.

Following ingestion

Rinse mouth immediately and drink plenty of water. Rinse mouth with water (only if the person is conscious). If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects). In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

4.2 Most important symptoms and effects, both acute and delayed

Nausea, Vomiting, Corrosion, Gastric perforation, Cough, Dyspnoea, Risk of blindness, Risk of serious damage to eyes

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings! water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

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water jet

5.2 Special hazards arising from the substance or mixture

Combustible.

Hazardous combustion products

In case of fire may be liberated: Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe dust.

6.2 **Environmental precautions**

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains. Take up mechanically.

Advice on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

Reference to other sections 6.4

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 **Precautions for safe handling**

Provision of sufficient ventilation. Handle and open container with care. Avoid exposure. Avoid dust formation. Clear contaminated areas thoroughly.

Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place. Keep container tightly closed.

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Observe hints for combined storage.

Consideration of other advice:

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 **Control parameters**

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Coun try	Name of agent	CAS No	Identifi- er	TWA [mg/ m³]	STEL [mg/ m³]	Ceil- ing-C [mg/ m³]	Nota- tion	Source
AU	nuisance dusts		WES	10			i	WES

Notation

Ceiling-C Ceiling value is a limit value above which exposure should not occur

Inhalable fraction

Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 STEL

TWA hours time-weighted average (unless otherwise specified)

Human health values

Relevant DNELs and other threshold levels Threshold **Endpoint** Protection goal, **Used** in **Exposure time** route of exposure level DNEL 0.3 mg/m³ human, inhalatory worker (industry) chronic - systemic effects DNEL 0.04 mg/kg bw/ human, dermal worker (industry) chronic - systemic effects

Environmental values

Relevant	Relevant PNECs and other threshold levels						
End- point	Threshold level	Organism	Environmental com- partment	Exposure time			
PNEC	193 ^{mg} / _l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)			

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8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection





Use safety goggle with side protection. Wear face protection.

Skin protection





hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. 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. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

type of material

Butyl caoutchouc (butyl rubber)

material thickness

>0,5 mm

· breakthrough times of the glove material

>480 minutes (permeation: level 6)

other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection





Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P2 (filters at least 94 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state solid

Colour white - whitish yellow

Odour characteristic Melting point/freezing point 142 – 143 °C

Boiling point or initial boiling point and boiling 267 – 270 °C at 1,013 hPa

range

Flammability this material is combustible, but will not ignite

readily

Lower and upper explosion limit 60 g/m³ (LEL)

Flash point 155 °C (c.c.)

Auto-ignition temperature not determined

Decomposition temperature not relevant

pH (value) 10.5 - 11.5 (in aqueous solution: $100 \, {}^{9}I_{l}$, $20 \, {}^{\circ}C$)

Kinematic viscosity not relevant

Solubility(ies)

Water solubility $267 \, ^{9}/_{1}$ at 20 °C (ECHA)

Partition coefficient

Partition coefficient n-octanol/water (log value): 0.22 (25 °C) (ECHA)

Soil organic carbon/water (log KOC) 1.512 (ECHA)

Vapour pressure 0.001 hPa at 25 °C

Density and/or relative density

Density $1.096 \, {}^{\rm g}/_{\rm cm^3}$ at 20 °C (ECHA)

Relative vapour density Information on this property is not available.

Particle characteristics No data available.

Other safety parameters

Oxidising properties none

9.2 Other information

Information with regard to physical hazard hazard classes acc. to GHS (physical hazards): not relevant

Other safety characteristics: There is no additional information.

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SECTION 10: Stability and reactivity

10.1 Reactivity

The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser, Carboxylic acid anhydride, Acetic anhydride, Acid chlorides, inorganic, Strong acid

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to GHS

Acute toxicity

Harmful if swallowed.

GHS of the United Nations, annex 4. May be harmful in contact with skin.

Acute toxicity Exposure route Method **Endpoint Value Species** Source LD50 1,500 mg/kg **ECHA** oral rat >2,000 ^{mg}/_{kg} LD50 dermal **ECHA** rat

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

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May damage the unborn child. Suspected of damaging fertility.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects)

• If in eyes

causes burns, Causes serious eye damage, risk of blindness

If inhaled

irritant effects, cough, Dyspnoea

If on skin

causes severe burns, causes poorly healing wounds

Other information

none

11.2 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)					
Endpoint	Value	Species	Source	Exposure time	
LC50	190 ^{mg} / _l	fish	ECHA	96 h	
EC50	200 ^{mg} / _l	aquatic invertebrates	ECHA	48 h	
ErC50	256.3 ^{mg} / _l	algae	ECHA	72 h	

Aquatic toxicity (chronic) Endpoint Value Species Source Exposure time EC50 459.9 mg/l microorganisms ECHA 7 h

12.2 Persistence and degradability

Theoretical Oxygen Demand (without nitrification): 1.559 $^{\rm mg}/_{\rm mg}$ Theoretical Oxygen Demand (with nitrification): 2.387 $^{\rm mg}/_{\rm mg}$ Theoretical Carbon Dioxide: 2.144 $^{\rm mg}/_{\rm mg}$

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Biodegradation

The substance is readily biodegradable.

Process of degradability

Process	Degradation rate	Time
carbon dioxide generation	0 %	10 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	0.22 (25 °C) (ECHA)
---------------------------	---------------------

12.4 Mobility in soil

Henry's law constant	0.42 Pa m³/ _{mol} at 25 °C (ECHA)
The Organic Carbon normalised adsorption coefficient	1.512 (ECHA)

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Does not contain an endocrine disruptor (ED) at a concentration of \geq 0,1%.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used. Handle contaminated packages in the same way as the substance itself. Completely emptied packages can be recycled.

Relevant provisions relating to waste(Basel Convention)

Properties of waste which render it hazardous

H8 Corrosives

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions. Non-contaminated packages may be recycled.

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SECTION 14: Transport information

14.1 UN number

UN 3259
IMDG-Code UN 3259
ICAO-TI UN 3259

14.2 UN proper shipping name

UN RTDGAMINES, SOLID, CORROSIVE, N.O.S.IMDG-CodeAMINES, SOLID, CORROSIVE, N.O.S.

ICAO-TI Amines, solid, corrosive, n.o.s.

Technical name 2-Methylimidazole

14.3 Transport hazard class(es)

UN RTDG 8
IMDG-Code 8
ICAO-TI 8

14.4 Packing group

UN RTDG III
IMDG-Code III
ICAO-TI III

14.5 Environmental hazards non-environmentally hazardous acc. to the dan-

gerous goods regulations

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport informationNational regulationsAdditional information(UN RTDG)

UN number 3259
Class 8
Packing group III
Danger label(s) 8



Special provisions (SP) 223, 274 UN RTDG

Excepted quantities (EQ)

ŪN RTDG

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Limited quantities (LQ) 5 kg UN RTDG

Emergency Action Code 2X

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name AMINES, SOLID, CORROSIVE, N.O.S.

Particulars in the shipper's declaration UN3259, AMINES, SOLID, CORROSIVE, N.O.S., (2-

Methylimidazole), 8, III

Marine pollutant -

Danger label(s) 8



Special provisions (SP) 223, 274

Excepted quantities (EQ) E1
Limited quantities (LQ) 5 kg
EmS F-A, S-B

Stowage category A

Segregation group 18 - Alkalis

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name Amines, solid, corrosive, n.o.s.

Particulars in the shipper's declaration UN3259, Amines, solid, corrosive, n.o.s., (2-

Methylimidazole), 8, III

Danger label(s) 8



Special provisions (SP)

Excepted quantities (EQ)

Limited quantities (LQ)

5 kg

SECTION 15: Regulatory information

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

There is no additional information.

National regulations(Australia)

Australian Inventory of Chemical Substances(AICS)

Substance is listed.

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

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National inventories

Country	Inventory	Status
AU	AIIC	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed (ACTIVE)
VN	NCI	substance is listed

Legend

AIIC

Australian Inventory of Industrial Chemicals List of Existing and New Chemical Substances (CSCL-ENCS) Domestic Substances List (DSL)

CSCL-ENCS DSL ECSI IECSC KECI

DSL Domestic Substances List (DSL)
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IICSC Inventory of Existing Chemical Substances Produced or Imported in China KECI Korea Existing Chemicals Inventory
NCI National Chemical Inventory
NZIOC New Zealand Inventory of Chemicals
PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg. REACH registered substances
TCSI Taiwan Chemical Substance Inventory
TSCA Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety- relev- ant
2.2		Hazard statements: change in the listing (table)	yes
2.3		Endocrine disrupting properties: Does not contain an endocrine disruptor (ED) at a concentration of ≥ 0,1%.	yes
14.8		Emergency Action Code: 2X	yes
15.1		National inventories: change in the listing (table)	yes

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Abbreviations and acronyms



Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
ED	Endocrine disruptor
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
STEL	Short-term exposure limit
TWA	Time-weighted average
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative
WES	Safe Work Australia: Workplace exposure standards for airborne contaminants

Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

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List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H351	Suspected of causing cancer.
H360Df	May damage the unborn child. Suspected of damaging fertility.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

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