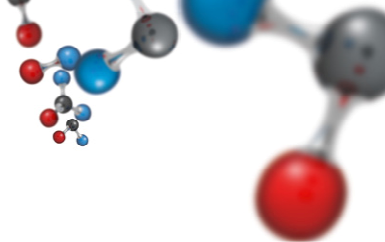


# SAFETY DATA SHEET

## CYCLOPENTYLAMINE



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

#### 1.1 Identification of the substance or preparation

Chemical name: **Cyclopentylamine**  
Registration no.: **01-2119932151-51-0000**  
Index number: **–**  
EC (EINECS) number: **213-697-3**  
CAS number: **1003-03-8**  
Other names of the substance: **cyclopentylamine, aminocyclopentane**

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

Uses of the substance: **Cyclopentylamine is used as intermediate for production of herbicides under Strictly Controlled Conditions.**

Uses advised against: **Other than industrial, without strictly controlled conditions in accordance with the provisions of paragraph 4 of Article 18 of REACH.**

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

Name: **BorsodChem MCHZ, s.r.o.**  
Name or business name: **BorsodChem MCHZ, s.r.o.**  
Place of business or headquarters: **Chemická 2039/1, 709 00 Ostrava – Mariánské Hory, Czech Republic**  
Identification number: **26019388**  
Telephone: **+420 596 641 111**  
Fax: **+420 596 642 040**  
E-mail of the technically competent person responsible for the safety data sheet: **zsvobodova@bc-mchz.cz**

#### 1.4 Emergency telephone number

Company telephone number: **+420 596 643 221 or 596 620 794 non-stop**  
**24-hours emergency contact - CHEMTREC: 001-703-527-3887, company code CCN 206 072**  
**The National Poisons Information Service (NPIS), City Hospital, Birmingham, B18 7QH, UK**  
**Tel: +44 121 507 4123, fax: +44 121 507 5580, e-mail: allistervale@npis.org, www.npis.org**  
**National Capital Poison Center, 3201 New Mexico Ave, Suite 310 Washington, DC 20016**  
**Emergency Line: 1-800-222-1222, fax: 202-362-8377, e-mail: pc@poison.org, www.poison.org**

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

According to Regulation (EC) no. 1272/2008:

**Flam. Liq. 2; H225 Highly flammable liquid and vapour.**

**Acute Tox. 2; H300 Fatal if swallowed.**

**Acute Tox. 3; H311+H331 Toxic in contact with skin.**

**Acute Tox. 3; H331 Toxic if inhaled.**

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

**Eye Dam. 1; H318 Causes serious eye damage.**

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

Specific concentration limits: **Not established**

# SAFETY DATA SHEET

## CYCLOPENTYLAMINE

The most important human health adverse effects during use of the substance or preparation:

**Fatal if swallowed. Toxic contact with skin or if inhaled. Causes burns at all types of contact. May cause sensitisation by skin contact.**

The most important adverse effects to environment during use of the substance/preparation:

**Highly flammable.**

### 2.2 Label elements

According to Regulation (EC) no. 1272/2008:

**Symbols:**



**Signal word: DANGER**

**H phrases:**

**H225 Highly flammable liquid and vapour.**

**H300 Fatal if swallowed.**

**H311+H331 Toxic in contact with skin or if inhaled.**

**H314 Causes severe skin burns and eye damage.**

**H317 May cause an allergic skin reaction.**

**P phrases:**

**P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**

**P280 Wear protective gloves/protective clothing/eye protection/face protection.**

**P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.**

**P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**

### 2.3 Other hazards

The substance is not identified as persistent, bio-accumulative and toxic (PBT) or very persistent, very bio-accumulative (vPvB) under Annex XIII of Regulation 1907/2006/EC.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Chemical name	<b>Cyclopentylamine</b>
Index number	–
EC No.	<b>213-697-3</b>
CAS No.	<b>1003-03-8</b>
Substance content (% w.)	<b>99.0</b>
Synonyms	<b>cyclopentylamine, aminocyclopentane</b>

Impurities: < 1 % w., CMR impurities < 0.1 % w.

# SAFETY DATA SHEET

## CYCLOPENTYLAMINE

### 3.2 Mixtures

The product is a chemical substance.

## SECTION 4: First aid measures

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### 4.1 Description of first aid measures

**Inhalation: Remove the victim quickly and considering own safety to fresh air, do not let the victim walk! Depending on situation, it is recommended to rinse oral cavity and, if necessary, nose with water. If the victim's clothing is contaminated, change the victim and protect him/her against cold. Ensure breathing. Call a physician!**

**If on skin: Remove contaminated clothing immediately; before washing or during washing, remove any rings, watches, bracelets that are in places of contact of the substance with skin. Rinse affected areas with stream of lukewarm water, if possible, for 10 to 30 minutes; do not use a brush, soap or neutralising agents! Cover burned areas of skin with a sterile dressing, do not use any ointments or other medical and pharmaceutical products. Cover the victim to protect him against cold. Depending on situation, call the rescue service or ensure medical attention.**

**If in eyes: Rinse eyes immediately under running water, open eyelids (even by force); if the victim wears contact lenses, remove them immediately. Do never neutralise! Rinse for 10 to 30 minutes from the inner to the outer ocular angle to prevent running of water in the other eye. Ensure as soon as possible medical treatment by an expert, if possible; the victim must get medical attention even in case of small injury.**

**If swallowed: Induce vomiting only if the victim is conscious and only in one hour after ingestion. Give to drink 1 to 2 dcl of lukewarm water with a small spoon of liquid soap and powdered or crushed activated coal corresponding to about 5 tablets. Administrate 10 to 20 crushed tablets of activated coal stirred in water in 5 minutes – irrespective of vomiting. Call a physician immediately!**

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

**Causes strong burning and pain of eyes, nasal mucous membrane and pharynges. May cause strong cough, nausea, respiratory distress to loss of consciousness. In any case, seek immediate medical help.**

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

**Symptomatic treatment.**

## SECTION 5: Firefighting measures

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### 5.1 Extinguishing media

Suitable extinguishing media: **sprinkled water, powder, foam, CO<sub>2</sub>**

Unsuitable extinguishing media: **not specified**

### 5.2 Special hazards arising from the substance or mixture: **Flammable liquid. Possibility of release of nitrogen oxides. Formation of toxic and explosive mixtures.**

### 5.3 Advice for firefighters: **Self-contained breathing apparatus, special protective clothing!**

## SECTION 6: Accidental release measures

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### 6.1 Personal precautions, protective equipment and emergency procedures: **Protection of air ways, protection of non-protected body parts, protection of eyes. Ensure ventilation.**

### 6.2 Environmental precautions: **Prevent contamination of earth and water.**

# SAFETY DATA SHEET

## CYCLOPENTYLAMINE

6.3 Methods and material for containment and cleaning up: **Cover with an absorbent material (Vapex, Vermikulit) and sweep up into a waste container. For methods of disposal see Section 13.**

6.4 Reference to other sections: **refer to sections 8 and 13**

### SECTION 7: Handling and storage

7.1 Precautions for safe handling: **Supplied in steel drums, tank trucks and IBC containers in designed Ex. Provide ventilation during emptying.**

7.2 Conditions for safe storage, including any incompatibilities: **Store in easily ventilated rooms in original packages or in steel tanks. The highest allowable storing temperature is 10 °C. Do not store together with foodstuffs, strong oxidising agents and strong inorganic acids.**

7.3 Specific end use(s): **Use only in industry.**

### SECTION 8: Exposure controls/personal protection

8.1 Control parameters

**Czech Republic: not established**

**EC countries (2000/39/EC): not established**

8.1.1 DNEL (Derived No Effect Level) for exposure of workers

**Not established.**

8.2 Exposure controls

**Use in a closed area, ensure exhaustion of vapours, use personal protective equipment.**

Engineering controls: **Ensure ventilation.**

Respiratory protection: **if necessary, protective mask with a filter against organic vapours - type A**

Hand protection: **protective gloves**

Eye protection: **protective glasses or face shield**

Skin protection: **protective clothing**

Other data: **Do not eat, drink and smoke during work. Wash your hands with hot water and soap after work, apply suitable reparative preparations.**

Environmental exposure controls

**Use in a closed circuit, waste gases burnt in a fire crack or cleaned by adsorption (activated carbon), wastewater treated biologically.**

### SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	<b>colourless to yellow liquid</b>
Odour:	<b>characteristic, like amines</b>
Odour threshold:	<b>not established</b>
pH:	<b>12.5</b>
Melting point/freezing point (°C):	<b>-85.7</b>
Initial boiling point (at 1013 hPa in °C):	<b>106-108</b>

# SAFETY DATA SHEET

## CYCLOPENTYLAMINE

Flash point (at 1013 hPa in °C):	<b>12.5</b>
Evaporation rate:	<b>not established</b>
Flammability (solid, gas):	<b>not established</b>
Upper/lower explosive limits (% vol.):	<b>9.4/1.3</b>
Vapour pressure (Pa at 20 °C):	<b>2 493</b>
Vapour pressure (Pa at 50 °C):	<b>12 000</b>
Vapour density:	<b>not established</b>
Relative density (at 20 °C):	<b>0.8689</b>
Solubility (in g/l at 20 °C):	<b>unlimited miscibility</b>
Partition coefficient: n-octanol/water (log $p_{ow}$ at 20 °C and pH 11):	<b>0.83</b>
Auto-ignition temperature (at 1013 kPa in °C):	<b>270</b>
Decomposition temperature:	<b>not established</b>
Viscosity (mPa.s at 20 °C):	<b>not established</b>
Explosive properties:	<b>no explosive properties</b>
Oxidising properties:	<b>no oxidising properties</b>

### 9.2 Other information

**Not available.**

## SECTION 10: Stability and reactivity

10.1 Reactivity: **Possibility of reaction at temperatures higher than 10 °C.**

10.2 Chemical stability: **Stable at low temperatures.**

10.3 Possibility of hazardous reactions: **Thermal decomposition in case of higher temperatures. Possibility of ignition in contact with hot surfaces, sparks or open fire.**

10.4 Conditions to avoid: **Formation of toxic and explosive mixtures at high temperatures.**

10.5 Materials to avoid: **Vigorous reactions with strong oxidising agents. Avoid contact with food.**

10.6 Hazardous decomposition products: **Combustion may produce toxic carbon monoxide and nitrogen oxides.**

## SECTION 11: Toxicological information

Information on toxicological effects

CLP evaluation

11.1 Acute toxicity:

- LD<sub>50</sub> (oral, rat) = **36 mg.kg<sup>-1</sup>** (BASF); **category 2**
- LD<sub>50</sub> (skin, rat) = **533 mg.kg<sup>-1</sup>** (Rhone - Poulenc); **category 3**
- LC<sub>50</sub> (inhal., rat) = **7.7 mg.l<sup>-1</sup>/4 h** (BASF); **category 3**

11.2 Irritation: **skin corrosive 1B**

Dermal irritation (rabbit): **corrosive** (BASF)

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## CYCLOPENTYLAMINE

Eye irritation (rabbit): **strongly irritant** (Rhone - Poulenc)

Experience in humans: **Irritating to skin, mucous membranes and airways.**

### 11.3 Sensitisation

Sensitisation (guinea pig): **sensitisation according to the Magnusson's and Kligman's test** (BASF)

11.4 Mutagenicity (in vitro and in vivo studies): **not established**

11.5 Carcinogenicity (rat, mouse): **not established**

11.6 Reproductive toxicity (rat): **not established**

11.7 Specific target organs toxicity – single exposure: **not established**

11.8 Specific target organs toxicity – repeated exposure: **not established**

11.9 Aspiration hazard: **not established**

## SECTION 12: Ecological information

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### 12.1 Toxicity

#### 12.1.1 Aquatic toxicity

*Daphnia*: **EC<sub>50</sub> (48 h) = 92.8 mg.l<sup>-1</sup>** (BASF)

Soil organisms:

*Bacteria*: **EC<sub>50</sub> (17 h) = 114.1 mg.l<sup>-1</sup>** (BASF)

Plants and land animals:

*Algae*: **IC<sub>50</sub> (96 h) = 61.6 mg.l<sup>-1</sup>** (BASF)

**Classification conclusion: Not harmful to aquatic organisms according to CLP.**

#### 12.1.2 Sediment toxicity

**Not established.**

#### 12.1.3 PNEC (Predicated No Effect Concentration)

**Not established.**

### 12.2 Persistence and degradability

Information on degradability:

Testing method: **OECD 303B**

Evaluation: **> 70 %, readily degradable** (BASF)

### 12.3 Bio-accumulative potential: **data not available**

### 12.4 Mobility in soil: **May enter the environment from waste water.**

Stability: **unlimited solubility in water**

Adsorption: **in activated carbon**

### 12.5 Results of PBT and vPvB assessment: **not included**

### 12.6 Other adverse effects: **not specified**

# SAFETY DATA SHEET

## CYCLOPENTYLAMINE

### SECTION 13: Disposal considerations

13.1 Waste treatment methods: **Incineration in a hazardous waste incineration plant in accordance with Act on Wastes under the catalogue numbers 160305, 160508 or 150202.**

Disposal of contaminated packaging: **Rinse barrels with water, contain wastewater and dispose in accordance with relevant regulations. Dispose of barrels in accordance with the waste act.**

### SECTION 14: Transport information

Land transport (ADR/RID)

Marine transport (IMDG):

Air transport (ICAO/IATA)

14.1 UN number:	<b>3286</b>
14.2 UN proper shipping name:	<b>Flammable liquid, toxic, corrosive, n.o.s. (Cyclopentylamine)</b>
14.3 Transport hazard class(es):	<b>3 (6.1 + 8)/ FTC</b>
Hazard identification number (Kemler code):	<b>368</b>
14.4 Packing group:	<b>II</b>
14.5 Environmental hazards:	<b>no</b>
Marine pollutant:	<b>no</b>
14.6 Special precautions for user:	<b>not included in „Segregation Groups“</b>
EMS:	<b>F-E, S-C</b>
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	<b>irrelevant</b>

### SECTION 15: Regulatory information

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

15.1.1 EU regulations concerning safety, health and environment/specific legislation concerning substances or mixtures, as amended:

- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;
- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC;
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives;
- Council Directive 96/82/EC on the control of major-accident hazards involving dangerous substances.

15.1.2 Regulations valid in CR and concerning safety, health and environment/specific legislation concerning substances or mixtures, as amended:

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- Act no. 350/2011 Coll., on chemical substances and chemical mixtures and on amendment of certain acts;
- [Decree of Ministry of Environment no. 93/2016 Coll. laying down Waste Catalogue](#)
- Governmental decree no. 361/2007 Coll., laying down occupational health and safety conditions.

### 15.2 Chemical safety assessment

**Supplier of substance has not carried out chemical safety assessment. Substance is used as intermediate under Strictly Controlled Conditions.**

## SECTION 16: Other information

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16.1 This safety data sheet supersedes all previous versions.

### 16.2 List of abbreviations

Carc.:	Carcinogenicity
CAS:	Chemical Abstracts Service
CLP:	Classification, labelling, packaging regulation
CSR:	Chemical safety report
DNEL:	Derived no-effect level
ES:	Exposure scenario
EC:	European Commission
EC <sub>50</sub> :	Median effective concentration EC <sub>50</sub> – used in toxicity tests. Median effective concentration EC <sub>50</sub> is the concentration of substance that causes 50 % mortality or 50 % decrease of growth or growth rate with reference to the control sample.
EINECS:	European Inventory of Existing Commercial Chemical Substances
ELINCS:	European List of Notified Chemical Substances
Irrit.:	Irritant
LC <sub>50</sub> :	Lethal concentration, 50 % (lethal concentration) is used for toxicity tests
LD <sub>50</sub> :	Absolute lethal dose that kills 50 % of members of population
LOAEC:	Lowest observed adverse effect concentration
NOAEC:	No observed adverse effect concentration
NOEC:	No observed effect concentration
OECD:	Organisation for Economic Cooperation and Development
PBT:	Persistent, bio-accumulative and toxic
PNEC:	Predicted no-effect concentration
REACH:	Registration, Evaluation, Authorisation and Restriction of Chemicals
Sens.:	Sensitivity
STOT:	Specific target organs toxicity
STOT SE:	Specific target organs toxicity - single exposure
STOT RE:	Specific target organs toxicity - repeated exposure
STP:	Sewage treatment plant
SU:	Sector of use
Tox.:	Toxicity
vPvB:	Very persistent and very bio-accumulative

### 16.3 List of mentioned phrases

H phrases:

**H225 Highly flammable liquid and vapour.**

**H300 Fatal if swallowed.**

**H311+H331 Toxic in contact with skin or if inhaled.**

**H314 Causes severe skin burns and eye damage.**

**H317 May cause an allergic skin reaction.**

**H318 Causes serious eye damage.**



# SAFETY DATA SHEET

## CYCLOPENTYLAMINE

P phrases:

**P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.  
No smoking.

**P280** Wear protective gloves/protective clothing/eye protection/face protection.

**P301+P310** IF SWALLOWED: Immediately call a POISON CENTER/doctor.

**P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

16.4 Sources used

**Safety data sheet – Cyclopentylamine, BC MCHZ, 5<sup>th</sup> edition (06/2015)**

16.5 History of revisions

Issue	Date	Change
1.0	30.11.2010	Preparation of the safety data sheet according to Regulation (EC) No 1907/2006 of the European Parliament and of the Council
2.0	17.08.2011	Overall revision of all sections of the safety data sheet according to Regulation (EC) No 453/2010 of the European Parliament and of the Council
3.0	01.08.2012	Adding data from the registration dossier. Updating the classification (using a combination of H-phrases), updating regulations valid in the Czech Republic.
4.0	01.12.2012	Revisions according to Regulation (EC) No 286/2011 of the European Parliament and of the Council
5.0	01.06.2015	Modification of Section 2 (deletion of classification under DSD) and other sections according to regulations 2015/830/EU
6.0	01.02.2018	Revision according to Commission Regulation (EU) no. 918/2016

Prepared by: IT & Quality, ecology and safety department – Ing. Zuzana Svobodová

Approved by: Head of IT & Quality, ecology and safety department – Ing. Stanislav Pekara, MBA

Version: English  
Date: 1<sup>st</sup> February 2018  
Safety Data Sheet  
Cyclopentylamine

[www.borsodchem-cz.com](http://www.borsodchem-cz.com)

The mentioned data reflect the present state of knowledge and experience and they are in compliance with valid legislation of the Czech Republic. The client is responsible for observing valid national legislation in the place of use.

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