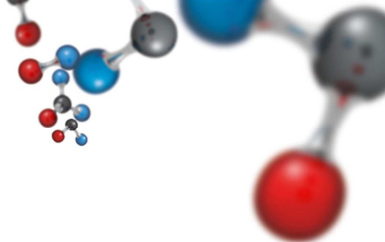


SAFETY DATA SHEET

N-ETHYLANILINE



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

1.1 Product identifier

Chemical name: **N-ethylaniline**
Registration no.: **01-2119943485-31-0001**
Index number: **612-053-00-2**
EC (EINECS) number: **203-135-5**
CAS number: **103-69-5**
Other names of the substance: **N-Ethylphenylamine, N-Ethylaminobenzol**

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

Application of the substance: **N-ethylaniline is used as an intermediate product for production of organic substances and gun powder stabiliser under strictly controlled conditions (overview of exposure scenarios in Appendix no. 1).**

Uses advised against: **Other than industrial.**

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:

Acute Tox. 3; H301 Toxic if swallowed.

Acute Tox. 3; H311 Toxic in contact with skin.

Acute Tox. 3; H331 Toxic if inhaled.

STOT RE 2; H373 May cause damage to organs through prolonged or repeated exposure.

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

Toxic in all types of contact. May cause damage to organs through prolonged or repeated exposure.

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The most important adverse effects to environment during use of the substance/preparation: **not specified**

2.2 Label elements

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

Symbols:



Signal word: **DANGER**

H phrases:

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

P phrases:

P260 Do not breathe vapours.

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

P302+P352 IF ON SKIN: Wash with plenty of water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical name	N-ethylaniline
Index number	612-053-00-2
EC no.	203-135-5
CAS No.	103-69-5
Substance content (% w.)	99.00
Synonyms	N-Ethylphenylamin, N-Ethylaminobenzol

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

3.2 Mixtures

The product is a chemical substance.

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SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation: **Move to fresh air, loosen clothing, remove contaminated clothing. Call a physician immediately!**

Skin: **Remove immediately contaminated clothing, wash affected skin area with plenty of cold or lukewarm water. If no injury to skin occurred, it is recommended to use soap, soap solution or shampoo. Call a physician!**

Eyes: **Rinse immediately and thoroughly with plenty of cold or lukewarm water for at least 10 minutes, open eyelids (even by force). If the victim wears contact lenses, remove them immediately. Seek medical help immediately!**

Ingestion: **Induce vomiting only if the victim is conscious and only in one hour after ingestion. Give to drink 1 to 2 dl 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

Toxic in all types of contact. Well absorbed by skin. Causes methemoglobinemia – blue coloration of lips, nails, skin, headaches, convulsions to loss of consciousness.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment. Methemoglobinemia therapy: toluidine blue (Koehler), or methylene blue (Coloxyd), thionine (Katalysin) or as supportive therapy (or in case of suspicion of slight methemoglobinemia) administrate high intravenous doses of ascorbic acid. In severe cases, perform blood transfusion or exchange transfusion. High consumption of liquids. Maintain sufficient diuresis due to risk of anuresis during haemolysis. Beware of hypothermia!

SECTION 5: FIREFIGHTING MEASURES

5.1 Fire extinguishing media

Suitable extinguishing media: **big fire – foam for polar liquids or water mist or water spray
small fire – sprinkled water, dry powder, CO₂**

Unsuitable extinguishing media: **not specified**

5.2 Special hazards arising from the substance or mixture: **Flammable liquid, risk of ignition if heated up. Possibility of release of carbon monoxide and nitrogen oxides. Formation of toxic and explosive mixtures.**

5.3 Advice for firefighters: **Self-contained breathing apparatus, special protective clothing! (Hazchem. Code: 3X).**

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: **Protection of air ways, protection of non-protected body parts, protection of eyes. Measure N-ethylaniline concentration in the environment, provide sufficient ventilation.**

6.2 Environmental precautions: **Prevent contamination of soil and water, check concentration of N-ethylaniline in the environment in the vicinity of accident.**

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: **Section 10, Section 13.**

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SECTION 7: Handling and storage

- 7.1 Precautions for safe handling: **Delivered in rail or truck tanks, best under nitrogen, or in steel barrels. Recommended transport temperature is 50 °C . Ventilation provided during emptying.**
- 7.2 Conditions for safe storage, including any incompatibilities: **Store in easily ventilated rooms in original packages or in steel tanks, best with nitrogen. The highest allowable storing temperature is 30 °C. Do not store together with foodstuffs, strong oxidising agents and strong inorganic acids.**
- 7.3 Specific end use(s): **Use only in industry under strictly controlled conditions.**

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Czech Republic: NPK-P (av.)/NPK-P (lim.) = **2/10** mg.m⁻³ (decision of Regional Hygiene Station in Ostrava)

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

8.1.1 DNEL (Derived No Effect Level) for occupational exposure: **not established**

8.2 Exposure controls

When used in a closed circuit or with sufficient vapour exhaust, it is necessary to use standard personal protective equipment. In case of insufficient vapour exhaust (N-ethylaniline concentration > 2 mg/m³), it is necessary to use respiratory protection.

Engineering measures: **Ensure ventilation. Check measurement of N-ethylaniline concentration in the working environment.**

Respiratory protection: **protective mask or half mask with filter (EN 140) against organic vapours - type A/P2**

Hand protection: **protective gloves (EN 374)**

Eye protection: **protective goggles or face shield (e.g. EN 166)**

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

Physical state (at 20 °C):	liquid
Appearance:	oily liquid
Colour:	colourless to yellowish, getting red to brown on air
Odour (smell):	characteristic aromatic
Odour threshold:	not established
pH:	not established
Melting point/freezing point (°C at 101.3 hPa):	-63.5

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Initial boiling point (at 101,3 hPa in °C):	205
Flash point (at 101.3 hPa in °C):	88
Evaporation rate:	not established
Flammability (°C):	the product is liquid
Upper/lower explosive limits (% vol.):	9.5/1.6
Vapour pressure (Pa at 20 °C):	40
Vapour pressure (Pa at 50 °C):	190
Vapour density:	not established
Relative density at 20 °C:	0.960 – 0.9672
Solubility at 20 °C (g.l ⁻¹) – in water:	1.0 – 10.0
Surface tension (at 25 °C in mN/m):	36.84
Partition coefficient: n-octanol/water (log p _{ow} at 25 °C and pH 6-8):	2.26
Auto-ignition temperature (at 101,3 kPa in °C):	480
Decomposition temperature:	not established
Explosive properties:	no explosive properties
Oxidising properties:	no oxidising properties

9.2 Other information

Viscosity at 20 °C (mPa.s):	2.17
Dissociation constant (pKa at 25 °C)	5.12

SECTION 10: Stability and reactivity

10.1 Reactivity : **0, the substance is not reactive under normal temperatures**

10.2 Chemical stability: **Stable under normal conditions.**

10.3 Possibility of hazardous reactions: **Strong heating up causes formation of toxic and explosive mixtures.**

10.4 Conditions to avoid: **Reaction with nitro group may produce carcinogenic N-nitrosoethylaniline.**

10.5 Incompatible materials: **Reacts vigorously with strong oxidising agents and inorganic acids, forms carcinogen with nitro group. 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

11.1. Acute toxicity – **category 3:**

- LD₅₀ (oral, rat) = **280 mg.kg⁻¹**
- LD₅₀ (derm., rabbit) = **1 347 mg.kg⁻¹**
- LC₅₀ (inhal., rat) = **1 130 - 1 480 mg.m⁻³/4 h**

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11.2 Irritation

Dermal irritation (rabbit): **5-6, dangerous (corresponds to OECD – degree 3)**

Eye irritation (rabbit): **5, dangerous (corresponds to OECD – degree 3)**

11.3 Sensitization

Skin sensitisation (guinea pig): **not established**

11.4. Mutagenicity (in vitro study): **AMES test – negative**

11.5. Carcinogenicity (rat, mouse): **Data not available**

11.6. Reproductive toxicity (rat): **Data not available**

11.7. Specific target organs toxicity – single exposure: **Data not available**

11.8. STOT (blood, haematopoietic system) – repeated exposure: **Data not available**

11.9. Aspiration hazard: **Data not available**

SECTION 12: Ecological information

12.1 Toxicity

12.1.1. Aquatic toxicity

Acute for fish

Oryzias latipes: **LC₅₀ (48 h) = 33 mg/l**

Brachydanio rerio: **LC₅₀ (96 h) = 50 mg/l**

Leciscus idus: **LC₅₀ (48 h) = 10 mg/l**

Prolonged for fish:

(Q)SAR – 14 dní: LC₅₀ = 130.5 mg/l

Acute for the invertebrates

Daphnia magna: **EC₅₀ (48 h) = 18 mg/l**

Prolonged for the invertebrates

(Q)SAR - 16 dní: LC₅₀ = 4 114 mg/l

Effective concentration for algae

Scenedesmus subspicatus: **EC₅₀ (96 h) = 98 mg/l**

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: **biologic aerobic - kinetic test – degree of removal 82.5 %.**

Evaluation: **Not biodegradable. Degrades by ventilation. No negative effect to activation cleaning process was observed up to concentration of 400 mg.l⁻¹.**

12.3. Bioaccumulative potential: **BCF = 3 – 13 (log Kow < 3).**

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

Stability: **partially soluble in water**

Adsorption: **not possible into soil.**

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

12.6. Other adverse effects: **WGK =2**

SECTION 13: Disposal considerations

13.1 Waste treatment methods: **Incineration in a hazardous waste incineration plant or disposal in a secure landfill in accordance with Act on Wastes under the catalogue numbers 16 03 05 or 16 05 08.**

Disposal of contaminated packaging: **Transport packaging designed only for N-ethylaniline. Rinse contaminated barrels with a lot of water, disposal of waste water in accordance with valid regulations.**

SECTION 14: Transport information

Land transport: (ADR/RID)

Marine transport (IMDG)

Air transport (ICAO/IATA)

14.1. UN number:	2272
14.2. UN proper shipping name:	N-ethylaniline
14.3 Transport hazard class(es):	6.1, T1
Hazard identification number (Kemler code):	60
14.4 Packing group:	III
14.5 Environmental hazards:	no
Marine pollutant:	no
14.6 Special precautions for user:	not included in „Segregation Groups“
EMS:	F-A, S-A
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	Irrelevant

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

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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:

- 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

Chemical safety assessment is not carried out. The substance is used as intermediate product under strictly controlled conditions.

SECTION 16: Other information

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 ₅₀ :	Median effective concentration EC ₅₀ – used in toxicity tests. Median effective concentration EC ₅₀ 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 ₅₀ :	Lethal concentration, 50 % (lethal concentration) is used for toxicity tests
LD ₅₀ :	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, bioaccumulative 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 bioaccumulative

16.3 List of mentioned phrases

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H phrases:

H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled.

H373 May cause damage to organs through prolonged or repeated exposure.

P phrases:

P260 Do not breathe vapours.

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

P302+P352 IF ON SKIN: Wash with plenty of water/...

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

16.4. Sources used

**Material safety data list – N-ethylaniline, BC MCHZ, [version 4.0 issued in 06/2015](#).
Registration dossier according to REACH.**

16.5. Versions history

Edition	Date	Modifications
1.0	30.11.2010	Elaboration of the material safety data sheet according to Regulation (EC) no. 1907/2006 of the European Parliament and of the Council
2.0	30.06.2011	Global review of all material safety data sheet sections according to Regulation (EC) no. 453/2010 of the European Parliament and of the Council
3.0	01.12.2012	Incorporation of the registration dossier data, amendment of the exposure scenario list, classification update (use of H-phrases combinations), update of valid Czech legislation, review according to Regulation (EC) no. 286/2011 of the European Parliament and of the Council
4.0	01.06.2015	Modification of Section 2 (deletion of classification under DSD) and other sections according to regulations 2015/830/EU
5.0	01.02.2018	Revision according to Commission Regulation (EU) no. 918/2016

SAFETY DATA SHEET

N-ETHYLANILINE

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

Approved by: Eng. Zdeněk Polách – IT&Quality, ecology and safety department manager

Version: English
Date: 01.02.2018
Safety Data Sheet
N-ethylaniline

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.

Manufactured by:

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BEZPEČNOSTNÍ LIST

N-ETYLANILIN

Appendix No.1

OVERVIEW OF EXPOSURE SCENARIOS

Exposure scenario number	Volume (t/y)	PRODUCTION	Identified uses:			Life-cycle stage		Sectors of use (SU)	Chemical products (PC)	Processes (PROC)	Environmental release (ERC)	Articles (AC)
			Formulation	End use	Consumers	Period of use (for articles)	Waste stage					
ES 2 Use as intermediate product, industry under SCC	N/A			X				SU3, SU9	PC19	PROC3, PROC8b, PROC9, PROC15	ERC6a	N/A

N/A – not available (confidential information)

SCC – strictly controlled conditions according to Art. 18(4) of REACH Regulation