SAFETY DATA SHEET
ANILINE

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

1.1 Product identifier

Chemical name: **Aniline**
Registration no.: **01-2119451454-41-0009**
Index number: **612-008-00-7**
EC number (EINECS): **200-539-3**
CAS number: **62-53-3**
Other names of the substance: **Phenylamine, Aminobenzene**

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

Uses of the substance: **Aniline is used for industrial processing as an intermediate product in production of dyes, isocyanates, antioxidants, chemicals for rubber industry, pharmaceutics, photography chemicals, herbicides, fungicides and for production of other organic compounds (the overview of exposure scenarios is set out in Annex 1).**

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

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:
Carc. 2; H351 Suspected of causing cancer.
Muta. 2; H341 Suspected of causing genetic defects.
Acute Tox. 3; H331 Toxic if inhaled.
Acute Tox. 3; H311 Toxic in contact with skin.
Acute Tox. 3; H301 Toxic if swallowed.
STOT RE 1; H372 Causes damage to blood and hematopoetic system through prolonged or repeated exposure.

Eye Dam. 1; H318 Causes serious eye damage.

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

Aquatic Acute 1; H400 Very toxic to aquatic life.

Aquatic Chronic 1; H410 Very toxic to aquatic life with long lasting effects.

Specific concentration limits:

STOT RE 1; H372 C ≥ 1 %
STOT RE 2; H373 0,2 % ≤ C < 1 %

The most important human health adverse effects relating to the uses of the substance or preparation:
Toxic in all types of contact. Limited evidence of carcinogenic effects.

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

Flammable. Dangerous for the environment, very toxic for aquatic organisms life with long lasting effects. High heating-up or fire cause decomposition of aniline and formation of highly toxic vapours containing oxides of nitrogen.

2.2 Label elements

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

Hazard pictograms:

Signal word: DANGER

H-phrases:

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

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

H372 Causes damage to blood and hematopoetic system through prolonged or repeated exposure.

H410 Very toxic to aquatic life with long lasting effects.

P-phrases:

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

P273 Avoid release to the environment.

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

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, bio-accumulative and toxic (PBT) or very persistent, very bio-accumulative (vPvB) under Annex XIII of Regulation 1907/2006/ES.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	**Aniline**
Index number	**612-008-00-7**
EC Number	**200-539-3**
CAS Number	**62-53-3**
Substance content (% w.)	**min. 99,4**
Synonyms	**Phenylamine, Aminobenzene**

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

3.2 Mixtures

This is a chemical substance.

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation: **Remove 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 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

Toxic in all types of contact. Well absorbed by skin. Causes methemoglobinemia – blue coloration of lips, nails, skin, headache, fatigue, shortness of breath, disturbances of consciousness or death.

In chronic cases, it may cause neurotic conditions, limited evidence of carcinogenic effects.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic therapy. Methemoglobinemia therapy: administrate intravenously toluidine blue, thionine (Katalysin) or, as supportive therapy (or in case of suspicion or low degree methemoglobinemia), high intravenous doses of ascorbic acid. In severe cases, perform blood transfusion or exchange transfusion. Abundant intravenous delivery of liquids or isotonic

solution of glucose and NaCl. Maintain sufficient diuresis due to risk of anuresis during haemolysis, depending on circumstances haemodialysis. Beware of overheating!

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: **big fire – foam for nonpolar liquids**
small fire – sprinkled water, powder, CO_2

Unsuitable extinguishing media: **not specified**

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

5.3 Advice for firefighters **Insulating 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 aniline concentration in the environment, provide sufficient ventilation.**

6.2 Environmental precautions **Prevent contamination of soil and water, check concentration of aniline in the environment in the vicinity of accident. Substance is dangerous for the environment.**

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

6.4 Reference to other sections: **see Section 10 and Section 13.**

SECTION 7: Handling and storage

7.1 Precautions for safe handling: **Delivered in rail or truck tanks under nitrogen or in steel barrels or in tank containers, the recommended maximum temperature during transport is 50 ℃. 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 ℃. Do not store together with foodstuffs, strong oxidising agents, inorganic acids, alkaline metals and alkaline-earth metals.

7.3 Specific end use(s): **Use only in industry under strictly controlled conditions or while observing conditions stated in the exposure scenario – see Annex 1.**

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Czech Republic: PEL/NPK-P 5/10 $mg.m^{-3}$

EC countries (2000/39/EC): Not established.

Country	Limit (8 hours)		Limit (15 minutes)	
	ppm	mg/m^3	ppm	mg/m^3
Austria	**2**	**8**	**10**	**40**

Country	Limit (8 hours)		Limit (15 minutes)	
	ppm	mg/m^3	ppm	mg/m^3
Belgium	2	7.7	-	-
Canada - Quebec	2	7.6	-	-
Denmark	1	4	2	8
France	2	10	-	-
Germany (AGS)	2	7.7	4	15.4
Germany (DFG)	2	7.7	4	15.4
Hungary	-	8	-	32
Poland	-	5	-	20
Spain (skin)	2	7.7	-	-
Sweden	1	4	2	8
Switzerland	2	8	4	16
USA - NIOSH	(1)	-	-	-
USA - OSHA	5	19	-	-
UK	1	4	-	-

Source: http://limitvalue.ifa.dguv.de/Webform_gw.aspx

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

Acute exposure (systemic effects) – inhalation:	**15.4 mg/m³**
Acute exposure (systemic effects) – dermal:	**4.0 mg/kg of weight/day**
Acute exposure (local effects) – inhalation:	**not established**
Acute exposure (local effects) – dermal:	**not established**
Prolonged exposure (systemic effects) – inhalation:	**7.7 mg/m³**
Prolonged exposure (systemic effects) – dermal:	**2.0 mg/kg of weight/day**
Prolonged exposure (local effects) – inhalation:	**not established**
Prolonged exposure (local effects) – dermal:	**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. When used in an open facility and insufficient vapour exhaust (aniline concentration > DNEL inhalation), it is necessary to use respiratory protection.

Engineering controls: **Ensure ventilation. Check measurement of aniline 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) - recommended materials: Butyl rubber - IIR: thickness ≥ 0.5 mm, resistance ≥ 480 min; Fluorinated rubber - FKM: thickness ≥ 0.4 mm, resistance ≥ 480 min. Warning: e.g. material: KCL Camapren 722; Neoprene: thickness ≥ 0.6 mm; resistance ≥ 180 min; it must be replaced after each contact with aniline.**

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

Skin protection: **protective clothing**

Other data: **When using do not eat, drink and smoke. 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:	**oily colourless liquid**
Odour:	**characteristic aromatic**
Odour threshold:	**not established**
pH:	**not established**
Melting point/freezing point (℃):	**-6.2**
Initial boiling point (at 1013 hPa in ℃):	**184.4**
Flash point (at 1013 hPa in ℃):	**76**
Evaporation rate:	**not established**
Flammability (solid, gas):	**the product is liquid**
Upper/lower flammability or explosive limits (% vol.):	**8.3/1.2**
Vapour pressure (hPa at 20 ℃):	**0.4**
Vapour density:	**not established**
Relative density (at 20 ℃):	**1.02**
Solubility (in g/l at 20 ℃):	**35**
Partition coefficient: n-octanol/water (log p_{ow} at 25 °C and pH 7,5):	**0.91**
Auto-ignition temperature (at 1013 hPa in ℃):	**630**
Decomposition temperature:	**not established**
Viscosity (mPa.s at 20 ℃):	**4.35**
Viscosity (mPa.s at 60 ℃):	**1.62**
Explosive properties:	**no explosive properties**
Oxidising properties:	**no oxidising properties**

9.2 Other information

Not available.

SECTION 10: Stability and reactivity

10.1 Reactivity: **temperatures exceeding 50 ℃ – high vapour pressure , toxic vapours, possibility of formation of explosive mixture with air in closed areas.**

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

10.3 Possibility of hazardous reactions: **Reacts vigorously with strong oxidising agents and inorganic acids.**

10.4 Conditions to avoid: **Contact with air (change of colour).**

10.5 Incompatible materials: **Reacts with alkaline metals and alkaline-earth metals while forming flammable gases. Dissolves copper and its alloys. Must not enter in contact with foodstuffs.**

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 – **category 3**

- LD_{50} (oral, cat) > **102** $mg.kg^{-1}$
- LD_{50} (oral, rat) = **442** $mg.kg^{-1}$
- LD_{50} (derm., cat) = **254** $mg.kg^{-1}$
- LC_{50} (inhal., rat – vapours) = **3.27** $mg.l^{-1}$/4 hours
- LC_{50} (inhal., rat) **= 1.86** $mg.l^{-1}$/4 hours

11.2 Irritation

Dermal irritation: **not classified**

Eye irritation (rabbit): **category 1**

11.3 Sensitisation

Skin sensitisation (mouse, guinea pig): **category 1**

11.4 Mutagenicity (in vitro and in vivo studies): **category 2**

11.5 Carcinogenicity (rat, mouse): **category 2**

11.6 Reproductive toxicity (rat): **data not available**

11.7 STOT-single exposure: **not classified**

11.8 STOT (blood, haematopoietic system)-repeated exposure: **category 1**

Repeated exposure studies were performed on rats and mice - oral and inhalation administration.

11.9 Aspiration hazard: **data not available**

SECTION 12: Ecological information

12.1 Toxicity

12.1.1 Aquatic toxicity

Acute: harmful for fish

Oncorhynchus mykiss: **LC_{50} (96 h) = 10.6 mg/l**

Prolonged for fish:

Pimephales promelas: **NOEC = 0.39 mg/l**

Acute: highly toxic for the invertebrates
Daphnia magna: **EC_{50} (48 h) = 0.16 mg/l**

Prolonged for the invertebrated
Daphnia magna: **NOEC (21 days) ≥ 0.004 mg/l**

Effective concentration for algae
Chlorella pyrenoidosa: **EC_{50} (72 h) = 175 mg/l (static test)**

Classification conclusion: Acute and chronic toxic for aquatic environment (see Daphnia magna).

12.1.2 Sediment toxicity

Lumbriculus variegatus: **EC_{10} = 15.3 mg/kg of weight of dry sediment** (survival, measured concentration)

12.1.3 PNEC (Predicated No Effect Concentration)

PNEC aqua (freshwater):	**0.0012 mg/l**
PNEC aqua (marine water):	**0.00012 mg/l**
PNEC sediment:	**0.153 mg/kg of weight of dry sediment**
PNEC sewage treatment plant:	**2 mg/l**
PNEC soil:	**0.033 mg/kg of weight of dry soil**
PNEC plants:	**0.006 mg/m^3**
PNEC oral:	**0.0023 mg/kg (calculated value)**

12.2 Persistence and degradability

Evaluation: **The product is not a high bioaccumulation potential substance.**

Evaluation: **Readily degradable in aqueous environment (in accordance with OECD criteria).**

12.3 Bioaccumulative potential: **for fish: log BCF = 0.9**
BCF = 2.6

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

Stability: **Partially soluble in water.**

Adsorption: **possible in soil, adsorption coefficient value: Koc = 410 l/kg.**

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

12.6 Other adverse effects: **not specified**

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods: **Detoxify through reaction with formaldehyde in the 1:1 ratio; non-toxic anhydroformaldehyde aniline $C_{21}H_{21}N_3$ is produced. In accordance with Act on waste, burn in the hazardous waste incinerator.**

Disposal of contaminated packaging: **It is recommended to burn contaminated packaging under waste code 15 01 10 in the waste incineration plant.**

SECTION 14: Transport information

Land transport (ADR/RID)
Marine transport (IMDG)
Air transport (ICAO/IATA)

14.1 UN number:	**1547**
14.2 UN proper shipping name:	**Aniline**
14.3 Transport hazard class(es):	**6.1, T1**
Hazard identification number (Kemler code):	**60**
14.4 Packing group:	**II**
14.5 Environmental hazards:	**yes**
Marine pollutant:	**yes**
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 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 350/2011 Coll., on chemical substances and chemical mixtures and on amendments to some 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 part of the chemical safety report for aniline - the overview of risk management measures is provided in Annex 1.

Detailed information on exposure scenarios will be contained in Annex 2 available at the customer's request.

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, 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 relevant phrases:

H phrases:

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

H318 Causes serious eye damage.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

H372 Causes damage to blood and hematopoetic system through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

P phrases:

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

P273 Avoid release to the environment.

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

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

Registration dossier for aniline.

Chemical safety report for aniline (Aniline REACH Consortium) of 06/2010, issued in 10/2012.

Material safety data sheet – Technical aniline, BC MCHZ, issued in 06/2015, version 5.0

16.5 History of revisions

Issue	Date	Change
1.0	30 November 2010	Preparation of the safety data sheet according to Regulation (EC) No 1907/2006 of the European Parliament and of the Council
2.0	10 October 2011	Additional information from the registration dossier
3.0	30 April 2012	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
4.0	1 December 2012	Complementation of the overview of exposure scenarios, update of classification (use of a combination of H-phrases), modification of Section 2 (deletion of designation under DSD), modification of Section 8 (specification of material of gloves to protect your hands), update of the regulations valid in the Czech Republic, and revisions according to Regulation (EC) No 286/2011 of the European Parliament and of the Council
5.0	1 June 2015	Modification of Section 2 (deletion of classification under DSD) and other sections according to regulations 2015/830/EU
6.0	1 February 2018	Revision according to Commission Regulation (EU) no. 918/2016

Prepared by: Head of Ecology and safety department – Eng. Zuzana Svobodová

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

Version: English
Date: 01.02.2018
Safety Data Sheet
Technical aniline

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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Appendix No. 1

OVERVIEW OF EXPOSURE SCENARIOS

Number of exposure scenario	Volume (t/r)	Production	Identified use			Stage of life cycle		Areas of application (SU)	Chemical products (PC)	Processes (PROC)	Release to the environment (ERC)	Items (AC)
			Formulation	End use	Consumers	Period of use (for items)	Stage of waste					
ES1 Production and use as intermediate industrial	N/A	X		X				SU3, 8, 9	PC1 9, 20	PROC1, 2, 3, 4, 8b, 9, 15	ERC1, 6a, 6c	N/A

N/A – Not available (confidential)

SUMMARY OF RISK MANAGEMENT MEASURES

Title	**Manufacture or use of aniline**
Sector of Use	SU3, SU8, SU9
Process Category	PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15
Product Category	PC19, PC20
Environmental release Category	ERC1, ERC6a, ERC6c
Processes, tasks, activities covered	Covers the manufacture and use of aniline in closed processes where exposure to aniline is contained, or where exposure (inhalation or dermal) to aniline may occur during sampling, maintenance or equipment breakage. Covers further processing (use) of aniline to form a number of different products such as MDA, rubber chemicals, dyes and pesticides during which aniline is predominantly contained but there may be some exposure during sampling, maintenance and equipment breakage. Covers the same processing (use) of aniline in batch or other processes where, due to the nature of the process design opportunity for exposure to aniline may occur but with exposure to aniline controlled by operational conditions or risk management measures. Covers the transfer of aniline by charging/discharging from/to small or large containers at dedicated facilities, with exposure to aniline controlled by operational conditions or risk management measures. Covers use of aniline as laboratory reagent at small scale laboratories with quantities of 1 L or 1 kg aniline or less present in the workplace with exposure to aniline controlled by operational conditions or risk management measures. It is assumed that all processes are performed at room temperature.
	Operational conditions and risk management measures

	Control of worker exposure
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated) [OC1]
Other Operational Conditions affecting worker exposure	Aniline carries a high hazard warning due to its H341 and H351 classification, therefore where procedures in the manufacture or use of aniline are not designed to contain emissions, workers exposure to aniline must be prevented by use of local exhaust ventilation and good work practices. These may include: • keeping equipment under negative pressure, • control of staff entry to work area, • ensuring all equipment is well maintained, • permits to work for maintenance work, • regular cleaning of equipment and work area, • systems in place to ensure correct use of RMMs and that OCs are being followed, training for staff on good practice, • procedures and training for emergency decontamination and disposal, • good standards of personal hygiene, • recording of any 'near miss' situations. • sensitisers – pre-employment screening and appropriate health screening.
Process Categories	**Risk Management Measures ***
1, 2, 3, 4, 8b, 9 and 15	**Aniline carries a high hazard warning due to its H341 and H351 classification, therefore where exceptional procedures may result in exposure to aniline**: Use suitable eye protection and gloves [PPE14]. Wear a full face respirator conforming to EN140 with Type A/P2 filter or better [PPE32] Wear suitable coveralls to prevent exposure to the skin [PPE27].
1 – Use in closed process, no likelihood of exposure	Handle substance within a closed system [E47].
2 – Use in closed, continuous process with occasional controlled exposure (e.g. sampling)	Handle substance within a closed system [E47]. Wear suitable gloves tested to EN374 [PPE15] during material sampling.
3 – Use in closed, batch process (synthesis or formulation)	Handle substance within a predominantly closed system provided with extract ventilation [E49]. Ensure material transfers are under containment or extract ventilation [E66]. Ensure samples are obtained under containment or extract ventilation [E76].
4 – Use in batch and other process (synthesis) where opportunity for exposure arises	Provide extract ventilation to points where emissions occur [E54]. Ensure material transfers are under containment or extract ventilation [E66]. Ensure samples are obtained under containment or extract ventilation [E76].

8b – Transfer of chemicals from/to vessels/ large containers at dedicated facilities.	Fill containers/cans at dedicated fill points supplied with local extract ventilation [E51]. Provide extract ventilation to material transfer points and other openings [E82].
9 – Transfer of substance into small containers (dedicated filling line, including weighing)	Fill containers/cans at dedicated fill points supplied with local extract ventilation [E51]. Provide extract ventilation to material transfer points and other openings [E82].
15 – Use of laboratory reagents in small scale laboratories	Carry out in a vented booth or extracted enclosure [E57]. Ensure samples are obtained under containment or extract ventilation [E76].

* standard phrases and codes are extracted from GES Worker Chemical Safety Assessment (CSA) Template on the Cefic web-site http://www.cefic.be/templates/shwPublications.asp?HID=750