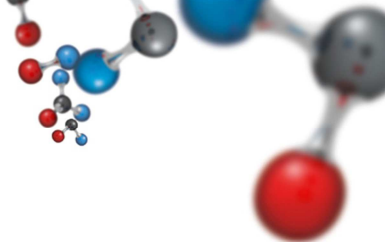


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N,N-DIMETHYLCYCLOHEXYLAMINE



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

1.1 Product identifier

Chemical name: **N,N-Dimethylcyclohexylamine**
Registration no.: **01-2119533030-60-0001**
Index number: **–**
ES (EINECS) number: **202-715-5**
CAS number: **98-94-2**
Other names of the substance: **N,N-Dimethylaminocyclohexane**

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

Uses of the substance: **Used especially as catalyser for polyurethane systems, for production of surface materials, fillers of biding agents, sealing agents, softeners (the overview of exposure scenarios is set out in Annex 1).**

Uses advised against: **Not specified.**

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. 3; H226 Flammable liquid and vapour.

Acute Tox. 3; H301 Toxic if swallowed.

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

Acute Tox. 3; H331 Toxic if inhaled.

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

Eye Dam. 1; H318 Causes serious eye damage.

Aquatic Chronic 2; H411 Toxic to aquatic life with long lasting effects.

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

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Corrosive. Burns skin and mucous membranes. Vapours severely irritate eyes and airways.

The most important adverse effects to environment during use of the substance/preparation:
Toxic to aquatic life with long lasting effects. Flammable.

2.2 Label elements

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

Symbols:



Signal word: DANGER

H phrases:

H226 Flammable liquid and vapour.

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

H314 Causes severe skin burns and eye damage.

H411 Toxic to aquatic life with long lasting effects.

P phrases:

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

P233 Keep container tightly closed.

P273 Avoid release to the environment.

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].

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	N,N-Dimethylcyclohexylamine
Index number	–
EC No.	202-715-5
CAS No.	98-94-2
Substance content (% w.)	min. 99,0
Synonyms	N,N-Dimethylaminocyclohexane

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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 the affected person to fresh air, unloose clothing or change him, if clothing is contaminated. If necessary, rinse oral cavity and nasal cavity with water. Protect the victim against chill and call medical help!

Skin: Remove immediately contaminated clothing (remove watches, rings, if they are in places of contact with skin), do not pull contaminated clothing over face! Rinse affected skin area under stream of warm water, if possible (30-35 °C), for 10 to 30 minutes and make sure that flowing water does not get into contact with those parts of body that were not contaminated. Do not use a brush, soap or neutralising agents! Cover the affected area with a sterile dressing, do not use any ointments or pharmaceutical products. Protect the victim against chill. Call a physician immediately!

Eyes: Rinse eyes immediately and thoroughly under stream of water for 10 to 30 minutes in the direction from the inner to the outer ocular angle (to prevent running of water in the other, unaffected eye, mouth and nose). Never use any neutralising solutions! If the victim keeps his eyelid tightly closed, use reasonable degree of force to open it. If the victim wears contact lenses, remove them immediately. The victim must always consult an ophthalmologist!

Ingestion: DO NOT INDUCE VOMITING – higher risk of harm to digestive tract!!! Risk of perforation of oesophagus and stomach! RINSE MOUTH IMMEDIATELY WITH WATER AND GIVE TO DRINK 2–5 dl of cold water to alleviate thermal effect of the caustic.

Due to almost immediate effect to mucous membranes, it is suitable to offer immediately tap water than loose time by looking for chilled liquid – each minute of delay causes irreversible harm to mucous membranes! Soda water or mineral waters are not recommended, as they may release gaseous carbon dioxide. It is not recommended to consume a lot of liquid, as it could induce vomiting and possible aspiration of the caustic in lungs).

Do not force the victim to drink, especially if he/she feels pain in mouth or throat. In this case, make the victim rinse his/her mouth. DO NOT ADMINISTER ACTIVATED CARBON! (*blackening will make examination of mucous membranes more difficult and activated carbon has no positive effect in case of acids and lye*). Do not give to eat. Do not administer anything by mouth if the victim is unconscious or has convulsions. Call a physician immediately!

4.2 Most important symptoms and effects, both acute and delayed

At low temperatures, due to low vapour pressure, irritation of eyes and mucous membranes is lighter. With higher temperatures, degree of irritation increases. Airways are irritated and there is a risk of oedema of larynx and lungs that may develop belatedly only after 2 days. Therefore, medical attention is always necessary in case of inhalation! Contact with eyes may cause disorders of cornea with subsequent fogging, especially in case of penetration of the substance into eye. Contact with the liquid causes severe skin burns. The substance absorbs by skin. It has allergenic effects. Sometimes, it may cause disorders of kidneys.

Contact with the substance manifests itself by severe burning in the nose, rhinopharynx, eyes and skin, severe irritating cough, nausea, breathlessness or even by loss of consciousness.

4.3 Indication of any immediate medical attention and special treatment needed

Symptomatic treatment. In case of contact with eyes, immediately rinse the conjunctival sac. Quickly provide treatment by an ophthalmologist! In case of irritation of airways, let inhale each

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10 minutes 5 doses from an aerosol dispenser with dexamethasone (Auxison dos. Aerosol) until problems disappear. Beware of lungs oedema that may be latent up to 2 days. Prophylactic treatment even without symptoms, each 10 minutes 5 doses of the aerosol, 3 in total, in case of minor symptoms, each 10 minutes 5 doses until symptoms disappear, at least one pack. Administer Hydrocortison or Prednisolon intravenously, 250 mg immediately, up to 1000 mg the first day, decrease the dose slowly the second and the third day. Strict rest in bed. Infection prophylaxis. Oxygen as needed, human albumin 20%. Codeine in case of irritating cough. Ingestion causes burns, therefore perform gastric lavage in case of ingestion. No emetics. It is more important to dilute contents of the stomach than to try to neutralise. Check function of kidneys and liver for several days in case of severe cases. In case of ingestion, risk of shock. **WARNING!** Savers and helping persons must wear complete protective clothing when giving first aid.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: **big fire – foam for polar liquids**
small fire – dry powder, powder or snow fire extinguisher

Unsuitable extinguishing media: **not specified**

5.2 Special hazards arising from the substance or mixture: **Flammable liquid. In warm days and when heated up, the liquid may form caustic and explosive mixtures with air. The mixtures are heavier than air, they keep at ground and in case of ignition, fire may blaze to big distances. Possibility of release of carbon monoxide and nitrogen oxides.**

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

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 concentration of N,N-Dimethylcyclohexylamine (hereinafter only DMCHA) in the environment, provide sufficient ventilation.**

6.2 Environmental precautions: **Prevent contamination of soil and water, check concentration of DMCHA 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: **Refer to section 10 and 13.**

SECTION 7: Handling and storage

7.1 Precautions for safe handling: **Delivered in rail or truck tanks or in steel barrels or in IBC containers designed EX. Ventilation provided during emptying. The recommended maximum temperature during transport is 50 °C.**

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 30 °C.

Do not store together with foodstuffs, strong oxidising agents and concentrated inorganic acids.

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

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Czech Republic: PEL (ind.)/NPC-W (lim.) = **5/10** mg.m⁻³

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

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

Acute exposure (systemic effects) – inhalation: **35 mg/m³**

Other DNEL not established yet.

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 (DMCHA concentration > DNEL inhalation), it is necessary to use respiratory protection.

Engineering controls: **Ensure ventilation. Check measurement of DMCHA 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

Appearance:	Colourless liquid
Odour:	like amines (fish)
Odour threshold:	not established
pH:	not established
Melting point/freezing point (°C) at 1013 hPa:	-77
Initial boiling point (at 1013 hPa in °C):	162.3
Flash point (at 1013 hPa in °C):	41
Evaporation rate:	not established
Flammability (solid, gas):	the product is liquid
Upper/lower flammability or explosive limits (% vol.):	19/3.6
Vapour pressure (hPa at 21.5 °C):	3.17
Vapour density:	not established
Relative density (at 20 °C):	0,85

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Solubility (in g/l at 20 °C):	13.4
Partition coefficient: n-octanol/water (log p_{ow} at 25 °C and pH 7.5):	2.31
Auto-ignition temperature (at 1013 hPa in °C):	> 200
Decomposition temperature:	not established
Explosive properties:	no
Oxidising properties:	no

9.2 Other information

Kinematic viscosity ($\text{mm}^2 \cdot \text{s}^{-1}$ at 20 °C) :	1.49
---------------------------------------------------------------------	------

SECTION 10: Stability and reactivity

10.1 Reactivity: **Possibility of reaction at temperatures higher than 30 °C.**

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: **In case of heating up formation of irritating and explosive mixtures. Thermal decomposition with formation of nitrogen oxides and carbon monoxide occurs at higher temperatures. Ignition in contact with hot surfaces, sparks or open fire.**

10.5 Incompatible materials: **see point 10.3.**

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**

- LD50 (oral, rat) = **272 – 289** $\text{mg} \cdot \text{kg}^{-1}$
- LD50 (derm., rat) = **380** $\text{mg} \cdot \text{kg}^{-1}$
- LC50 (inhal., rat) = **1.7 – 5.8** $\text{mg} \cdot \text{l}^{-1}/6$ hours
- LC50 (inhal., rat) = **9** $\text{mg} \cdot \text{l}^{-1}/1$ hour

11.2 Irritation

Dermal irritation (rabbit): **category 1B**

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

11.3 Sensitisation

Skin sensitisation (mouse): **not sensitising**

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

11.5 Carcinogenicity: **following a subacute test, no subsequent tests performed**

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11.6 Reproductive toxicity (rat): **NOAEL > 1500 ppm** ⇒ **not toxic for reproduction**

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

11.8 STOT (blood, haematopoietic system) – repeated exposure: **not classified**

11.9 Aspiration hazard: **data not available**

SECTION 12: Ecological information

12.1 Toxicity

12.1.1 Aquatic toxicity

Acute for fish:

Oncorhynchus mykiss: **LC₅₀ (96 h) = 28 mg.l⁻¹**

Prolonged for fish: **data not available**

Acute for the invertebrates:

Daphnia magna: **LC₅₀ (48 h) = 75 mg.l⁻¹**

Prolonged for the invertebrates: **data not available**

Effective concentration for algae

Scenedesmus subspicatus: **EC₅₀ (72 h) = 2 mg.l⁻¹ (static test)**

Algae: **NOErC (72 h) = 0,078 mg.l⁻¹**

Classification conclusion: Classified as hazardous to the aquatic environment – Chronic toxicity 2nd category.

Wassergefährdungsklasse (WGK): 3

12.1.2 Sediment toxicity: **Data not available.**

12.1.3 PNEC (Predicated No Effect Concentration)

PNEC water (surface):	0.002 mg.l⁻¹
PNEC water (sea):	0.0002 mg.l⁻¹
PNEC sediment:	0.0211 mg.kg⁻¹ of weight of dry sediment
PNEC sewage treatment plant:	20.6 mg.l⁻¹
PNEC soil:	0.00305 mg.kg⁻¹ of weight of dry soil
PNEC plants:	data not available
PNEC birds:	data not available
PNEC oral administration:	data not available

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 Bio-accumulative potential: **BCF < 50 (estimate based on log P_{ow})**

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

Stability: **Soluble in water**

Adsorption: **possible in soil, adsorption coefficient value: log K_{oc} = 1.84 at 20 °C**

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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: **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: **It is recommended to burn contaminated packaging under waste code 150110 in the waste incineration plant.**

SECTION 14: Transport information

Land transport (ADR/RID)

Marine transport (IMDG)

Air transport (ICAO/IATA)

14.1 UN number:	2264
14.2 UN proper shipping name:	N,N-Dimethylcyclohexylamine
14.3 Transport hazard class(es):	8, CF1
Hazard identification number (Kemler code)	83
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-E, S-C
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.

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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., about 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 report on chemical safety of N,N-Dimethylcyclohexylamine -- 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 A list of mentioned phrases:

H phrases:

H226 Flammable liquid and vapour.

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

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

H411 Toxic to aquatic life with long lasting effects.

P phrases:

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

P233 Keep container tightly closed.

P273 Avoid release to the environment.

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].

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 N,N-Dimethylcyclohexylamine.

Chemical safety report for N,N-dimethylcyclohexylamine (PURAMCAT Consortium) of 10/2010.

Material safety data sheet – N,N-Dimethylcyclohexylamine, BC MCHZ, [version 6.0 from 12/2016](#).

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 November 2012	Complementation of the overview of exposure scenarios, update of classification (use of a combination of H-phrases), 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	12 December 2016	Revision according to Commission Regulation (EU) no. 918/2016
6.1	24 August 2018	Modification of Section 12 (WGK)

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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: 24.08.2018
Safety Data Sheet
N,N-Dimethylcyclohexylamine

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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Telefon: +420 596 641 111
Fax: +420 596 626 258

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Annex 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					
ES2 Formulation and (re)packing of substances and mixtures	N/A		X					SU3, 10, 22	PC1, 9a, 9a	PROC1, 3, 4, 5, 8a, 8b, 9, 15	ERC2	NR
ES3 Flexible foam	N/A			X				SU3, 12, 17, 18, 21	PC32	PROC1, 2, 3, 4, 5, 8a, 8b, 9, 14, 15, 21	ERC3, 5, 10a, 11a	Taric code 3909509090
ES4 Rigid foam	N/A			X				SU2a, 3, 12, 17, 19, 21	PC32	PROC1, 2, 3, 4, 5, 7, 8a, 8b, 9, 15, 21	ERC3, 5, 8c, 8f, 10a, 11a	Taric code 3909509090
ES5 Coatings	N/A			X				SU3, 21, 22	PC32	PROC1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 11, 13, 14, 15	ERC3, 5	Taric code 3909509090
ES6 Adhesive/sealant	N/A			X				SU3, 21, 22	PC32	PROC1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 11, 13, 14, 15	ERC3, 8c, 8f	Taric code 3909509090
ES7 Elastomers	N/A			X				SU3, 21, 22	PC32	PROC1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15	ERC8c, 8d, 8f, 10a, 11a	Taric code 3909509090

N/A – not available (confidential information)

NR – not relevant

SAFETY DATA SHEET

N,N-DIMETHYLCYCLOHEXYLAMINE

SUMMARY OF RISK MANAGEMENT MEASURES

Title	Manufacture or use of N,N-Dimethylcyclohexylamine (DMCHA)
Sector of Use	SU2a, SU3, SU9, SU10, SU12, SU17, SU18, SU19, SU21, SU22
Process Category	PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC14, PROC15, PROC21
Product Category	PC1, PC9a, PC9b, PC32
Article Category	n/a
Environmental release Category	ERC1, ERC2, ERC3, ERC5, ERC8c, ERC8d, ERC8f, ERC10a, ERC11a
Specific environmental release category	n/a
Processes, tasks, activities covered	<p>Covers the manufacture and use of DMCHA in closed/open processes where exposure to DMCHA is contained, or where exposure (inhalation or dermal) to DMCHA may occur during sampling, maintenance or equipment breakage. Covers further processing (use) of DMCHA to form a number of different products such as polymer preparations and compounds during which <u>DMCHA predominantly contained</u> but there may be some exposure during sampling, maintenance and equipment breakage.</p> <p>Covers the same processing (use) of DMCHA in batch or other processes where, due to the nature of the process design opportunity for exposure to DMCHA may occur but with <u>exposure to DMCHA controlled by operational conditions or risk management measures</u>.</p> <p>Covers the transfer of DMCHA by charging/discharging from/to small or large containers at dedicated or non-dedicated facilities, <u>with exposure to DMCHA controlled by operational conditions or risk management measures</u>.</p> <p>Covers use of DMCHA as laboratory reagent at small scale laboratories with quantities of 1 L or 1 kg DMCHA or less present in the workplace with <u>exposure to DMCHA controlled by operational conditions or risk management measures</u>.</p>
	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	<p>The procedures in the manufacture or use of DMCHA are not designed to contain emissions, workers exposure to DMCHA must be prevented by use of local exhaust ventilation and good work practices. These may include:</p> <ul style="list-style-type: none"> • keeping equipment under slightly increased 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.
Process Categories	Risk Management Measures *
1 – Use in closed process, no likelihood of exposure	<p>Handle substance within a closed system [E47]. Ensure material transfers are under containment or extract ventilation [E66].</p> <p>Use suitable eye protection and gloves [PPE14].</p> <p>Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>

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<p>2 – Use in closed, continuous process with occasional controlled exposure (e.g. sampling)</p>	<p>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]. Use suitable eye protection and gloves [PPE14]. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
<p>3 – Use in closed, batch process (synthesis or formulation)</p>	<p>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]. 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].</p>
<p>4 – Use in batch and other process (synthesis) where opportunity for exposure arises</p>	<p>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]. 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].</p>
<p>5 – Mixing or blending in batch processes for formulation of preparations.</p>	<p>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]. 97% efficiency is required by means of the use of LEV described above. 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].</p>
<p>7 – Industrial spraying.</p>	<p>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]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
<p>8a – Transfer of chemicals from/to vessels/ large containers at non-dedicated facilities.</p>	<p>Fill containers/cans at dedicated fill points supplied with local extract ventilation [E51]. Provide extract ventilation to material transfer points and other openings [E82]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
<p>8b – Transfer of chemicals from/to vessels/ large containers at dedicated facilities.</p>	<p>Fill containers/cans at dedicated fill points supplied with local extract ventilation [E51]. Provide extract ventilation to material transfer points and other openings [E82]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>

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9 – Transfer of substance into small containers (dedicated filling line, including weighing)	<p>Fill containers/cans at dedicated fill points supplied with local extract ventilation [E51]. Provide extract ventilation to material transfer points and other openings [E82].</p> <p>Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
10 – Roller application or brushing	<p>Provide extract ventilation to points where emissions occur [E54]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
11 – Non industrial spraying	<p>Provide extract ventilation to points where emissions occur [E54]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
13 – Treatment of articles by dipping and pouring	<p>Provide extract ventilation to points where emissions occur [E54]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
14 – Production of preparation or articles by tableting, compression, extrusion, pelletisation	<p>Provide extract ventilation to points where emissions occur [E54]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear a respirator protection. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
15 – Use as laboratory reagent	<p>Provide extract ventilation to points where emissions occur [E54]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>
21 – Low energy manipulation of substances bound in materials and/or articles	<p>Provide extract ventilation to points where emissions occur [E54]. 97% efficiency is required by means of the use of LEV described above. Use suitable eye protection and gloves [PPE14]. Wear suitable coveralls to prevent exposure to the skin [PPE27].</p>

* 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>