

SAFETY DATA SHEET

SECTION 1: IDENTIFICATION OF PRODUCT AND COMPANY

1.1 Identification of the product

Dimethylethanolamine

Reach Registration number:	01-2119492298-24-0002
EC number:	203-542-8
EC name:	2-dimethylaminoethanol
CAS number:	108-01-0
CAS name:	Ethanol, 2-(dimethylamino)-
IUPAC name:	2-(dimethylamino)ethanol
Index number:	603-047-00-0
Molecular formula:	C ₄ H ₁₁ NO
Acronym:	DMEA
Molecular weight range:	89.1362
Structural formula:	



1.2 Use of the product

Chemical used in synthesis and/or formulation of industrial products.

1.3 Identification of the company

Company: Limited Liability Company **Sintez OKA**
 Address: 606000, Russian Federation, Nizhny Novgorod region, Dzerzhinsk, East industrial area Chimmash, 7th km of East road, building 547.

1.4 Emergency Contact

(8313) 27-25-65 7:30am – 4:15pm, (8313) 27-25-80 round-the-clock
 Fax: (8313) 27-25-72
 Language of the phone service – Russian.

1.5 Person responsible for placement of the product in the market within the European Community

Independent Petroleum Distribution SA
 Andrey Bachev
 118, Drève Richelle postal code: 1410, Waterloo, Belgium
 Phone: +41417402427
 Fax: +41417402494
 mail to: ab@ipd-sa.com

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 [CLP]

Hazard classes and Hazard categories	Hazard Statements
Flammable liquids: 3.	H226: Flammable liquid and vapour.
Acute tox.: 3 (Inhalation).	H331: Toxic if inhaled.
Acute tox.: 4 (dermal).	H312: Harmful in contact with skin.
Acute toxicity: 4 (oral).	H302: Harmful if swallowed.
Skin corrosion: 1B.	H314: Causes severe skin burns and eye damage.
Eye Damage 1.	H318: Causes serious eye damage.
Specific target organ toxicity - single: 3. (Inhalation)	H335: May cause respiratory irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard pictograms:



Signal word: Danger.

Hazard statements:

H226: Flammable liquid and vapour.

H302+H312: Harmful if swallowed or in contact with skin.

H318: Causes serious eye damage.

H331: Toxic if inhaled.

H314: Causes severe skin burns and eye damage.

H335: May cause respiratory irritation.

Precautionary Statements (Prevention):

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

P240: Ground and bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting equipment.

P242: Use only non-sparking tools.

P243: Take action to prevent static discharges.

P260: Do not breathe dust/gas/mist/vapours/spray;

P264: Wash hands thoroughly after handling;

P270: Do not eat, drink or smoke when using this product;

P271: Use only outdoors or in a well-ventilated area;

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

Precautionary Statements (Response):

P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

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

P363: Wash contaminated clothing before reuse;

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;

P370 + P378: In case of fire: Use carbon dioxide (CO₂), water spray, dry chemical, alcohol-resistant foam for extinction.

P312: Call a POISON CENTER or doctor if you feel unwell.

Precautionary Statements (storage):

P403 + P235 + P233: Store in a well-ventilated place. Keep cool. Keep container tightly closed.

P405: Store locked up.

Precautionary Statements (Disposal):

P501: Dispose of contents/container to hazardous or special waste collection point.

Hazard determining component(s) for labelling: dimethylethanolamine.

2.3. Other hazards

No additional information available.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**3.1 Substances**

Identification name	CAS number	Index number	EC Number	Weight % content (or range)
2-dimethylaminoethanol	108-01-0	603-047-00-0	203-542-8	≥ 99

3.2 Mixtures

Not applicable.

SECTION 4: FIRST AID MEASURES**4.1 Description of first aid measures****4.1.1 General notes:**

Remove to fresh air immediately. Get medical attention immediately. Show this material safety data sheet to the doctor in attendance. Take off contaminated clothing and shoes immediately. If symptoms persist, call a physician. Personal protective equipment for first aid responders is recommended.

4.1.2 Following inhalation:

Remove to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Symptoms may be delayed. Immediate medical attention is required.

4.1.3 Following skin contact:

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician. Wash contaminated clothing before re-use. Thoroughly clean shoes before reuse.

4.1.4 Following eye contact:

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Obtain medical attention. Continue rinsing eyes during transport to hospital.

4.1.5 Following ingestion:

Rinse mouth. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Do not induce vomiting. If swallowed seek medical advice immediately.

4.1.6 Self-protection of the first aider:

Should pay attention to own safety.

4.1.7 Notes for the doctor:

Do not induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11. Further symptoms are possible.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: FIREFIGHTING MEASURES**5.1 Extinguishing media****Suitable extinguishing media:**

Carbon dioxide (CO₂), water spray, dry chemical, alcohol-resistant foam.

Unsuitable extinguishing media:

High volume water jet.

5.2 Special hazards arising from the substance or mixture**Hazardous combustion products:**

Products of combustion are carbon oxides and nitrogen oxides, blood poison.

5.3 Advice for fire-fighters

Wear self-contained breathing apparatus and chemical-protective clothing.

Do not approach to burning containers. Cool the containers with water from the maximum possible distance. Precipitate the generated gases and vapors with sprayed water.

5.4 Additional information

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

SECTION 6: ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures****6.1.1 For non-emergency personnel:**

Protective equipment:

Avoid inhalation. Avoid contact with the skin, eyes and clothing.
Wear personal protective equipment (including personal protective equipment referred to under Section 8 of the SDS) to prevent any contamination of skin, eyes and personal clothing;

Emergency procedures:

Removal of ignition sources, provision of sufficient ventilation; the need to evacuate the danger area.

6.1.2 For emergency responders:

Personal protective equipment: Self-contained breathing apparatus and chemical-protective clothing.

6.2 Environmental precautions

Should not be released into the environment. Remove immediately adhering matter. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.

6.3 Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations. Collect waste in suitable containers, which can be labeled and sealed. Incinerate or take to a special waste disposal site in accordance with local authority regulations.

6.4 Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: HANDLING AND STORAGE**7.1 Precautions for safe handling****7.1.1 Protective measures:**

Measures to prevent fire:

Flammable liquids. Keep away from sources of ignition - No smoking.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Use spark-proof tools and explosion-proof equipment.

Measures to prevent aerosol and dust generation:

Ensure thorough ventilation of store and work areas.

Measures to protect the environment:

Hermeticity of equipment, product storage tanks, containers.

7.1.2 Advice on general occupational hygiene:

Wear personal protective equipment.

Not to eat, drink and smoke in work areas.

Wash hands after use.

Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances.

Avoid extreme heat.

Keep container tightly closed and in a well-ventilated place.

Keep away from sources of ignition - No smoking.

Storage stability: Storage temperature: 20 °C.

Storage duration: 12 Months. May yellow after lengthy storage.

Data on the storage life specified in the safety data are not a contractual guarantee of the properties of the product.

7.3 Specific end uses

For a substance designed for a specific end use(s), recommendations attached in the exposure scenarios (exposure scenarios for identified uses are included of Annex of SDS).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Substance: 2-dimethylaminoethanol.

CAS number: 108-01-0.

EC number: 203-542-8.

DNEL -values for workers:

Route of exposure	Acute effect local	Acute effects systemic	Chronic effects local	Chronic effects systemic
Oral	Not required			
Inhalation	22 mg/m ³	22 mg/m ³	7,4 mg/m ³	7,4 mg/m ³
Dermal	80 µg/cm ²	5 mg/kg bw/day	No-threshold effect and/or no dose-response information available	1,04 mg/kg bw/day

PNEC-values:

PNEC	Assessment factor
PNEC water	
PNEC aqua (freshwater):	0.066 mg/L
PNEC aqua (marine water):	0.007 mg/L
PNEC aqua (intermittent releases):	0.066 mg/L
PNEC sediment	
PNEC sediment (freshwater):	0.053 mg/kg sediment dw
PNEC soil	
PNEC soil:	0.018 mg/kg soil dw
PNEC sewage treatment plant	
PNEC STP:	10 mg/L

8.2. Exposure controls

The full range of specific risk management measures to be taken during use in order to minimise worker and environmental exposure.

8.2.1 Appropriate engineering controls

Hermeticity of equipment, product storage tanks, containers.

Ensure thorough ventilation of store and work areas.

Avoid extreme heat.

Periodically control the content of harmful substances in the air of the working zone.

Handle in accordance with good industrial hygiene and safety practice.

8.2.2 Personal protective equipment

8.2.2.1 Eye and face protection:

Tightly fitting safety goggles (splash goggles) (e.g. EN 166) and face shield.

8.2.2.2 Skin protection:

Hand protection

Chemical resistant protective gloves (EN 374).

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374): butyl rubber (butyl) - 0.7 mm coating thickness.

Manufacturer's directions for use should be observed because of great diversity of types.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

8.2.2.3 Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point > 65 °C, e. g. EN 14387 Type A).

8.2.2.4 General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice.

Avoid contact with the skin, eyes and clothing. Do not breathe vapour/spray.

Wearing of closed work clothing is required additionally to the stated personal protection equipment. Take off immediately all contaminated clothing. Store work clothing separately.

8.2.3 Environmental exposure controls

Discharge into the environment must be avoided.

To execute the full range of specific RMM and OC required to fulfill commitment under community environmental legislation.

Adequately control the impact of MEA on the environment is given in the exposure scenarios, annexed to the SDS.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Property	Results
Appearance	Colorless to slightly yellowish liquid (at 20 °C and 1013 hPa)
Odour	Amine-like
Odour threshold	Not determined due to potential health hazard by inhalation
pH value	10.5 – 11 (100 g/l, 20 °C)
Melting point/freezing point	-59 °C
Boiling point	134.1 °C (at 1013.25 hPa)
Flash point	40 °C at 1013 hPa
Evaporation rate	No data available
Flammability	Flammable
Upper/lower flammability or explosive limits	Lower explosion limit: 1.4 %(V) (32,5 °C) (air) Upper explosion limit: 12.2 %(V) (75,5 °C) (air)
Vapour pressure	10 hPa at 28.1 °C
Relative density	0.89 g/m ³ at 20 °C
Solubility in water	miscible
Partition coefficient n-octanol/water (log value)	-0.55 at 23 °C
Autoflammability / Self-ignition temperature	230 °C at 1013 hPa
Decomposition temperature	No data available
Viscosity	Static viscosity: 3.74 mm ² /s at 25 °C. Dynamic viscosity: 3.584 mPa s at 21.6 °C.
Explosive properties	Non explosive
Oxidising properties	Highly flammable substance

9.2 Other information

Property	Results
Surface tension	28.2 mN/m at 20 °C
Particle size distribution (Granulometry)	The substance / product is marketed or used in a non solid or granular form
Dissociation constant	15.33 at 20 °C

SECTION 10: STABILITY AND REACTIVITY**10.1 Reactivity**

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals: No corrosive effect on metal.

Formation of flammable gases: Forms no flammable gases in the presence of water.

10.2 Chemical stability

Dimethylethanolamine is stable when rules of storage and use are observed. May yellow after lengthy storage.

10.3 Possibility of hazardous reactions

Reacts with halogenated compounds. Reacts with oxidizing agents. Reacts with acids. Reacts with acid chlorides.

10.4 Conditions to avoid

Avoid contact with acids and acid forming substances.

Keep away from sources of ignition - No smoking.

Avoid extreme heat.

See MSDS section 7 - Handling and storage.

10.5 Incompatible materials

Substances to avoid: Strong oxidizing agents.

10.6 Hazardous decomposition products

Heating or fire can release toxic gas (Nitrogen oxides (NO_x), Carbon monoxide, nitrosamine, Ammonia)

SECTION 11: TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects****Acute toxicity:**

	Effect dose	Method
Acute oral toxicity	LD 50: 1187 mg/kg bw	Rat, OECD Guideline 401
Acute dermal toxicity	LD 50: ≥ 3000 mg/kg bw	Rabbit; OECD Guideline 402
Acute inhalative toxicity	LC 50: 5983 mg/m ³ air	Inhalation risk test

Skin corrosion / irritation:

Skin irritation / corrosion: corrosive (OECD Guideline 404).

The EC has classified this substance with «Causes severe skin burns and eye damage» (H314).

Serious eye damage/irritation:

Eye irritation: Causes serious eye damage (H318).

Respiratory or skin sensitisation:

No sensitizing effect (guinea pig maximisation test).

Germ cell mutagenicity:**Assessment of mutagenicity:**

All valid studies for genetic toxicity in vitro as well as in vivo showed negative results.

Carcinogenicity:

The whole of the information assessable provides no indication of a carcinogenic effect.

Reproductive toxicity:

Assessment of teratogenicity: Causes developmental effects in animals at high, maternally toxic doses.

Assessment of developmental toxicity: The no-observed-adverse-effect level is at or above 100 ppm for embryofetal toxicity and teratogenicity.

NOAEC: 370 mg/m³ (route: inhalation).

Specific target organ toxicity (single exposure):

Cat. 3 (H335: May cause respiratory irritation).

Route of exposure: inhalative.

Specific target organ toxicity (repeated exposure):

The available information is not sufficient for the evaluation of specific target organ toxicity.

Aspiration hazard:

No aspiration hazard expected.

SECTION 12: ECOLOGICAL INFORMATION**12.1. Toxicity****Acute (short-term) toxicity:**

	Effect dose	Exposure time	Species	Method	Evaluation
Acute (short-term) toxicity on fish	LC50	96 h	Leuciscus idus	DIN 38412, Part 15 (static)	146.63 mg/L
Acute (short-term) toxicity on aquatic invertebrates	EC50	48 h	Daphnia magna	Директива 79/831 / ЕЕС, Приложение V, C2	98.4 mg/L

Chronic (long-term) toxicity:

	Effect dose	Exposure time	Species	Method	Evaluation
Long-term toxicity to fish	Study scientifically not justified.				
Long-term toxicity to aquatic invertebrates	Study scientifically not justified.				

Toxicity to aquatic algae and microorganisms:

	Effect dose	Exposure time	Species	Method	Evaluation
Toxicity to aquatic algae	EC50/LC50	72 h	Desmodesmus subspicatus (предыдущее название: Scenedesmus subspicatus)	BASF AG, 1989	66.08 mg/L
	EC10/LC10 or NOEC				24.49 mg/L
Toxicity to microorganisms	EC10	30 min	Activated sludge	OECD Guideline 209	> 1000 mg/L

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

12.2 Persistence and degradability

The substance is readily biodegradable according to OECD criteria.

Hydrolysis:

The substance is readily biodegradable. Further, according to structural properties, hydrolysis is not expected/probable

Phototransformation in air:

Degradation rate constant with OH radicals: 83.3745×10^{-12} cm³/molecules-sec.

Half-life: 4.618 h.

Biodegradation in water:

60 % BOD of the ThOD (14 d) (OECD 301C) (aerobic, activated sludge, domestic).

Sum parameter:

Biochemical oxygen demand (BOD): 1,050 mg/g.

12.3 Bioaccumulative potential

Because of the n-octanol/water distribution coefficient (Log Kow (Pow): -0.55 at 23 °C) accumulation in organisms is not to be expected.

12.4 Mobility in soil

Assessment transport between environmental compartments:

The substance will not evaporate into the atmosphere from the water surface.

Adsorption to solid soil phase is not expected.

12.5 PBT or vPvB Properties Assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification.

12.6 Other adverse effects

None.

12.7 Additional information

Due to the pH-value of the product, neutralization is generally required before discharging sewage into treatment plants.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods:

Incinerate in suitable incineration plant, observing local authority regulations.

Contaminated packaging:

Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 2051

IMDG: 2051

ICAO/IATA: 2051

ADN: 2051

14.2 UN proper shipping name

ADR/RID: 2-DIMETHYLAMINOETHANOL

IMDG: 2-DIMETHYLAMINOETHANOL

ICAO/IATA: 2-DIMETHYLAMINOETHANOL

ADN: 2-DIMETHYLAMINOETHANOL

14.3 Transport hazard class(es)

ADR/RID: Class or division: 8. Subsidiary Class 3.

IMDG: Class or division: 8. Subsidiary Class 3.

ICAO/IATA: Class or division: 8. Subsidiary Class 3.

ADN: Class or division: 8. Subsidiary Class 3.

14.4 Packing group

ADR/RID: II.

IMDG: II.

ICAO/IATA: II.

ADN: II.

14.5 Environmental hazards

ADR/RID: no.

IMDG: no.

ICAO/IATA: no.

ADN: no.

14.6 Special precautions for user

Always transport in closed containers. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation: IBC.

Pollution name: dimethylethanolamine

Pollution category: Y

Ship Type: 3

SECTION 15: REGULATORY INFORMATION

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

Authorisation and/or restriction on use: None.

Other EC legislation:

- Regulation (EC) N 1907/2006,

- Regulation (EC) No 1272/2008.

15.2 Chemical Safety Assessment

For dimethylethanolamine has been carried out a chemical safety assessment.

SECTION 16: OTHER INFORMATION**16.1 Key source for data: CHEMICAL SAFETY REPORT.****16.2 Abbreviations and acronyms**

ADR/RID:	European Agreement on transport of Dangerous Goods on Road /International Regulations Concerning the Carriage of Dangerous Goods by Rail
ADN:	European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS number:	Chemical Abstracts Service number.
CLP:	Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008].
DNEL:	Derived No-Effect Level.
EC number:	European Chemical number.
IATA/ICAO:	International Air Transport Association/ International Civil Aviation Organization).
IMDG:	International Maritime Dangerous Goods Code.
LC50:	Lethal concentration, 50 %.
LD50:	Median lethal dose.
NOEC:	NO OBSERVED EFFECT CONCENTRATION.
OECD:	Organization for Economic Cooperation and Development.
PBT:	Persistent, bioaccumulative and toxic.
PNEC:	Predicted No-Effect Concentration.
REACH:	Registration, Evaluation and Authorisation of CHemicals).
STOT:	SPECIFIC TARGET ORGAN TOXICITY
vPvB:	Very persistent/very bioaccumulative.

16.3 Application to the SDS

Exposure scenarios for identified uses are annexed to the SDS.

16.4 Further information

Vertical lines in the left-hand margin indicate an amendment from the previous version.

The above information is presented herein in good faith and is based on the current knowledge on the material. Standard requirements may be changed and may differ in different locations of the companies. Providing the compliance with the requirements of state and local laws is the responsibility of the Buyer.

Technical director



R.R. Koltun