

SAFETY DATA SHEET

according to Regulations (EU) No.1907/2006 & Commission Regulation (EU) No 2015/830

N,N'-DIISOPROPYLCARBODIIMIDE

16th May 2018
Version 9

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

1.1 Product identifiers

Product name:	N,N'-DIISOPROPYLCARBODIIMIDE
Trade name, synonyms:	(1,3-Diisopropylcarbodiimide, DIC)
IUPAC name:	N,N'-di(Propan-2-yl)methanediimine
CAS No.:	693-13-0
EC No.:	211-743-7
REACH reg. No.:	01-2120754999-28-0000
Product No.:	3102-KL

1.2 Relevant identified uses of the substances or mixture and uses advised against.

Identified uses: Chemical in syntheses. Laboratory reagent.

1.3 Details of supplier of the safety data sheet

Supplier/Manufacturer:	KEMILAB Organics Ltd. H-8200 Veszprém, Zrínyi street 13/B; Hungary
Telephone:	+36 30 226 4546;
Fax:	+88 412 559
E-mail:	kemilab@kemilab.hu

1.4 Emergency telephone number:

Emergency telephone call number: See: <https://echa.europa.eu/support/helpdesks>
Availability: 24 hours

SECTION 2.: Hazards identification

2.1 Classification of the substance or mixture

2.1.1 Classification according to Regulation (EC) No 1272/2008 (EU-GHS/CLP)

Physical hazards	Flammable liquids	Category 3	H226
Health hazards	Acut toxicity	Category 2	H330
	Skin irritation	Category 2	H315
	Serious eye damage	Category 1	H318
	Respiratory senzitzation	Category 1	H334
	Skin senzitzation	Category 1	H317
	Specific target organ toxicity – single exposure	Category 3	H335

Environmental hazards: Not Classified

2.1.2 Classification according to EU Directives 67/548/EEC or 1999/45/EC

T+	Very toxic
R 10	Flammable
R 26	Very toxic by inhalation
R 37/38	Irritating to respiratory system and skin.
R 41	Risk of serious damage to eyes
R 42/43	May cause sensitization by inhalation and skin contact.

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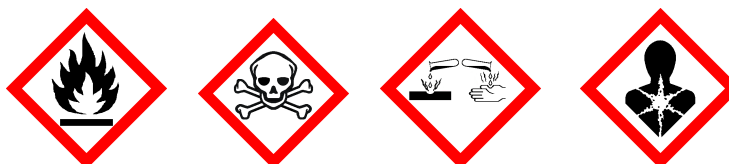
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2.2 Label elements

2.2.1 According to Regulation No. 1272/2008 (CLP)/EU

- Hazard pictograms:



- Signal word:

DANGER

- Hazard statements:

H226	Flammable liquid and vapour.
H315	Causes skin irritation
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled
H334	May cause allergy and asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation

- Precautionary statements:

P210	Keep away from heat., hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves and eye/face protection.
P284	Wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P309+P310	IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

2.3 Other hazards

SECTION 3.: Composition/information on ingredients

The name of the component	Formula/Molar mass	EC-No.	CAS No	Weight %
N,N'-Diisopropylcarbodiimide	$(\text{CH}_3)_2\text{CHN}=\text{CNCH}(\text{CH}_3)_2$ Molar mass: 126,2 g/mol	211-743-7	693-13-0	≥ 99



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SECTION 4.: First aid measures

4.1 Description of first aid measures

- Protection of first-aiders: First-aid providers must NOT enter the hazardous area or attempt rescue without putting on appropriate personal protective equipment. Take appropriate steps to avoid every contact of the material. All sources of ignition should be eliminated if safe to do so.
- Inhalation: Instantly remove clothing soiled by the material. Remove breathing apparatus only after all soiled clothing has been completely removed. In case of irregular breathing or respiratory arrest provide artificial respiration. Move to fresh air. If breathing has stopped, apply artificial respiration. Keep patient warm. If rapid recovery does not occur, seek medical attention. Seek immediate medical advice in every case.
- Skin contact: Instantly wash affected skin with soap and plenty of water. Seek immediate medical advice.
- Eye contact: DO NOT DELAY. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If persistent irritation occurs, seek medical attention.
- Ignition: DO NOT DELAY. Do not induce vomiting. Never give anything by mouth to an unconscious person. SEEK MEDICAL ATTENTION IMMEDIATELY.
- Note to physician: Treat symptomatically.

4.2 Most important symptoms and effects, both acute and delayed

Damages to the eyes. Nausea, Headache, Vomiting, . Causes severe corneal edema. Temporary blindness has been reported. Symptoms may be delayed.

4.2 Indication of immediate medical attention and special treatment needed.

No data available.

SECTION 5.: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media

For small fires use media such as „alcohol” foam, dry chemical or carbon dioxide. For large fires apply water fog as far as possible.

5.2 Special hazards arising from the substance and mixture

Carbon oxides and nitrogen oxides. Possible HCN!!!!

5.3 Precautions for fire fighters

Wear positive pressure self-contained breathing apparatus and chemical protective clothing (by EU standard: EN469-including: helmets, protective boots and gloves)

5.4 Further informations

Use water spray to cool unopened containers!

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



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SECTION 6.: Accidental release measures

6.1 *Personal precautions, protective equipment and emergency procedures*

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

Wear protective equipment written in Section 8 of this SDS. Keep unprotected persons away. Ensure adequate ventilation. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Keep away all of ignition sources!!

6.2 *Environmental precautions*

Prevent contamination of soil and water. If materials enters drains, it should be separated the contaminated and pumped out into an open vessel. Emergency services may be called to assist in this operation.

6.3 *Methodes and materials for containment and cleaning up*

Do not flush away residues with water. Contain spillage and then collect with an electrically protected vacuum cleaner or wet-brushing and place in container for disposal according to local regulations (see Section 13).

6.4 *Reference to other sections*

For disposal see Section 13.

SECTION 7.: Handling and storage

7.1 *Precautions for safe handling*

When using do not eat, drink or smoke! Avoid contact with skin, eyes and clothing. Do not breath vapour, mist. Prevent spills and avoid all operations which contaminate clothing and work areas. Ensure good ventilation/exhausting at the workplace. Avoid generation of vapours/aerosols! Observe label precautions!

7.2 *Conditions for safe storage, including any incompatibilities*

Segregate from acids and strong oxidants! Keep away from humidity and water!! Keep ignition sources away - don't smoke!!! Keep container tightly closed in a cool, well-ventillated place. It may store at ambient temperature.

Contaners which are opened must be carefully inertized by Nitrogen then resealed and kept it upright to prevent leakage!

7.3 *Specific end uses:* No data available

SECTION 8.: Exposure controls/personal protection

8.1 *Control parameters*

Occupational exposure limits are not available. Apply it closed system!!!! Need a suitable ventilation!!!!

8.2 *Exposure controls*

- **Eye/face protection:** Tightly fitting safely goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- **Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose the contaminated gloves after use in accordance with applicable laws. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.



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- **Body protection:** Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- **Respiratory protection:** Where risk assessment shows air purifying respirators are appropriate use a full-face respirator with multi purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as EN 140.

SECTION 9.: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Pale yellow to colourless clear liquid
b) Odour	Stench
c) Odour threshold	No data available
d) pH	No data available
e) Melting/Freezing point	No data available
f) Initial boiling point and boiling range	145 – 148 °C at 1.010 hPa
g) Flash point	33,9 °C (in closed cup)
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapour pressure	13 hPa at 23 C ⁰
l) Vapour density	No data available
m) Relative density	0,814 g/cm ³ at 20 C ⁰
n) Water solubility	Practically insoluble, it decomposes!
o) Partition coefficient: n-octanol/water	Not data available
p) Autoignition temperature	Not data available
q) Decomposition temperature	Not data available
r) Viscosity	Not data available
s) Explosive properties	Not data available
t) Oxidizing properties	Not data available

9.2 **Other safety informations:** No data available.

SECTION 10.: Stability and reactivity

10.1 Reactivity

It reacts with acidic water violently!!!!

10.2 Chemical stability

It is stable under the prescribed storage condition.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames, sparks, humidic spaces.

10.5 Incompatible materials

Strong oxidizing materials, acids.

10.6 Hazardous decomposition products

No data available



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SECTION 11.: Toxicological informations

11.1 Information on toxicological effects

- **Acute toxicity:**
LC 50 ~ 0,13 mg/l air = 21 ml/m³ /(4 h) rat Acute Tox. 2 H330 Fatal if inhaled
V (saturated vapour concentration) = 4559 ml/m³
LD50 ivn – mus 36 mg/kg
- **Skin corrosion/irritation:**
No data available
- **Serious eye damage/eye irritation**
Eye Dam 1 – H 318 Causes serious eye damage
- **Respiratory or skin sensitization**
May cause allergic respiratory and skin reactions
- **Germ cell mutagenicity**
Genotoxicity in vitro – Ames test – negative
- **Carcinogenicity**
IARC: No component of this product present at levels greater than or equal to 0,1% is identified as probable, possible or confirmed human carcinogen by IARC.
- **Reproductive toxicity:**
No data available
- **Specific target organ toxicity – single exposure**
Inhalation – may cause respiratory irritation
- **Specific target organ toxicity – repeated exposure**
STOT SE 3 – H 335 May cause respiratory irritation
- **Aspiration hazards**
No data available
- **Potential health effects**
Inhalation: may be fatal if inhaled. Causes respiratory track irritation.
Ingestion: may be harmful if swallowed.
Skin: may be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye burns.
- **Signs and Symptomes of exposure**
It may cause sever damage to eyes: 8-14 hours symptome free state after this a strengthening stabbing pain emerges in the injured person's eyes together a light sensitivity and the patient may lost the vision temporarily. After recovering of the vision the light sensitivity remains to some lenght
- **Additional information.** RTECS FF2175000

SECTION 12.: Ecological information

- 12.1 **Toxicity**
EC 50 (algea 96 h) predicted 1,52 mg/l QSAR
- 12.2 **Persistence and degradability**
It is not readily biodegradable.
- 12.3 **Bioaccumulative potential**
No data available
- 12.4 **Mobility in soil**
No data available
- 12.5 **Results of PBT and vPvB assesment**
No data available
- 12.6 **Other adverse effects**
No data available



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SECTION 13.: Disposal considerations

13.1 Waste treatment method

Product. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert care in igniting as this material is highly flammable. All may happen in accordance with the requirements of the local Waste Disposal Authority only.

Contaminated packaging: Dispose of as unused product.

SECTION 14.: Transport information

14.1. UN number

UN No. (ADR/RID)	3384
UN No. (IMDG)	3384
UN No. (ICAO)	3384
UN No. (ADN)	3384

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (1,3-Diisopropylcarbodiimide)
Proper shipping name (IMDG)	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (1,3-Diisopropylcarbodiimide)
Proper shipping name (ICAO)	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (1,3-Diisopropylcarbodiimide) FORBIDDEN FOR ICAO
Proper shipping name (ADN)	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. (1,3-Diisopropylcarbodiimide) FORBIDDEN FOR ADN

14.3. Transport hazard class(es)

ADR/RID class	6.1
ADR/RID subsidiary risk	3
ADR/RID classification code	TF1

Transport labels:



IMDG class	6.1
IMDG subsidiary risk	3

ICAO class/division	6.1
ICAO subsidiary risk	3

ADN class	6.1
ADN subsidiary risk	3

14.4. Packing group

ADR/RID	I
IMDG	I
ICAO	I
ADN	I



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14.5 Environmental hazards

Environmentally hazardous substance/marine pollutant - NO (see point 12.1)

14.6. Special precautions for user

EmS	F-E, S-D
ADR transport category	1
Emergency Action Code	•3W
Hazard Identification Number (ADR/RID)	63
Tunnel restriction code (D/E)	(D/E)

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

SECTION 15.: Regulatory information

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

National regulations	Chemical safety, Act 2000 (XXV) in Hungary Health Regulations 44/2000 (XII.27) ADR regulation 2015 Kemilab Dossier to REACH full registration (26th January 2018)
EU legislation 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) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015. 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 (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16.: Other information

16.1 Abbreviations and acronyms:

ADR:	Accord europeen sur le transport des marchandises dangereuses par Route (European Agreement concerning the international Carriage of Dangerous Goods by Road)
RID:	Reglement interntional conRegulation Concerning the cemant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Dangerous Goods by Rail)
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
IMDG.	International Maritime Dangerous Goods.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods regulations by the „International Air Transport Asociation” (IATA)
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions for the Safe Transport of Dangerous Goods by air.



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GHS:	Globally Harmonized System of Classification and Labelling of Chemicals.
EINECS:	European Inventory of Existing Commercial Substances.
CAS:	Chemical abstract Service (division of the American Chemical Society)
LC50:	Lethal concentration to 50 percent of a test population
LD50:	Lethal dose to 50 percent of a test population (Median Lethal Dose)
EC50:	50% of maximal Effective Concentration
CLP:	Classification, Labelling and Packaging
IUPAC:	International Union of Pure and Applied Chemistry
NIOSH:	National Institute for Occupational Safety and Health
CEN:	European Committee for Standardization
RTECS:	Registry of Toxic Effects of Chemical Substances
EmS	Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS Guide)

16.2 Recommended use: Chemical for synthesis.

16.3 Revision date: 8th revision on 16th May 2018

16.4 Hazard statements in full

H226	Flammable liquid and vapour.
H315	Causes skin irritation
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H330	Fatal if inhaled
H334	May cause allergy and asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation

16.4 Further informations: The information in this document should be available to all who may handle the product. The information contained herein based on the present state of our knowledge. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

END OF DOCUMENT