

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 08.03.2013

Revision: 06.03.2013

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

1.1 Product details

· **Trade name:** di-n-butyl ether

· **CAS Number:**
142-96-1

· **EC number:**
205-575-3

· **Index number:**
603-054-00-9

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the preparation** Solvents

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Kairav Chemofarbe Industries Ltd.

Regd Office:

502, filix, LBS Marg, Opposite Asian Paints

Bhandup (w), Mumbai-400078. Fax.91-

22-25958586

· **1.4 Further information obtainable from:**

Administrative office: Phone:91-22-25968361,91-

22-25968362,91-22-25962457 Fax: 91-22-25958586

· **Emergency telephone number:**

Contact details of European
importer Emergency telephone
number: Telephone number of

EU importer: Opening hours:

Other Comments (e.g. language(s) of the phone service): English



SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**



Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

R10-52/53: Flammable. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:** Not applicable.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

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· 2.3 Hazard pictograms



GHS02 GHS07

· Signal word Warning

· Hazard statements

- H226 Flammable liquid and vapour.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H412 Harmful to aquatic life with long lasting effects.

· Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P241 Use explosion-proof electrical/ventilating/lighting/equipment.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/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.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· 2.4 Other hazards

· Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· 3.1 Chemical characterization: Substances

· CAS No. Description

142-96-1 di-n-butyl ether

· Identification number(s)

· EC number: 205-575-3

· Index number: 603-054-00-9

· Additional information:

Molecular Formula : C₈H₁₈O

Molecular Weight: 130.23

SECTION 4: First aid measures

· 4.1 Description of first aid measures

- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- After swallowing: Do not induce vomiting; call for medical help immediately.
- 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed Subsequently administer: activated charcoal (20-40g in 10% slurry)

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self contained breathing apparatus for fire fighting if necessary.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment. See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Handling:**
- **7.1.1 Information for safe handling:** No special precautions are necessary if used correctly.
- **Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
- **7.2 Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in a cool, dry, well-ventilated area away from incompatible substances.
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** it is used as solvent

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

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· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

· **Material of gloves** Butyl rubber, BR

· **Penetration time of glove material**

Splash contact:

Thickness: 0.7mm

Break-through time: > 30 min

· **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Colour: Colourless

· **Odour:** Fruit-like

· **Odour threshold:** 0.068-462 ppm

· **pH-value (0.2 g/l) at 20 °C:** 5.2

· **Change in condition**

Melting point/Melting range: -95.3 °C

Boiling point/Boiling range: 140-143 °C (at 1.013 hPa)

· **Flash point:** 25 °C (Closed cup)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 175 °C

· **Decomposition temperature:** Not determined.

· **Self-igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

Lower: 0.9 Vol %

Upper: 8.5 Vol %

· **Oxidizing properties** No oxidizing properties.

· **Vapour pressure at 20 °C:** 6.4 hPa

· **Density at 20 °C:** 0.77 g/cm³

· **Relative density at 20 °C** 0.769 g/cm³

· **Vapour density** 4.5 g/cm³

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· Evaporation rate	Not determined.
· Solubility in / Miscibility with water at 20 °C:	10 g/l
· Partition coefficient (n-octanol/water):	3.21 log POW
· Viscosity:	
Dynamic at 20 °C:	0.69 mPas
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** Vapour/ air-mixtures are explosive at intense warming
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications
- **10.2 Chemical stability** Sensitive to light and air
- **10.3 Possibility of hazardous reactions**
Exothermic reaction with oxidising agents, strong acids. Risk of explosion with nitrogen trichloride.
- **10.4 Conditions to avoid** Avoid excessive heat and light.
- **10.5 Incompatible materials:** Avoid contact with oxidizing agents and acids.
- **10.6 Hazardous decomposition products:** Peroxides.

SECTION 11: Toxicological information

· 11.1 Information on toxicological effects

· (a) Acute toxicity:

· LD/LC50 values relevant for classification:

Oral	LD50	7400 mg/kg (rat)
Dermal	LD50	10000 mg/kg (rabbit)
Inhalative	LC50	169 gm/m ³ /15M (mouse)

· Primary irritant effect:

· (b) on the skin:

Irritant to skin and mucous membranes. Open irritation test

Species : Rabbit

Dose/ Duration : 380 mg causes mild irritation

· (c) on the eye:

Irritating effect.

Standard Draize test

Species : Human

Dose/ Duration : 200 ppm/15M

· (d) Sensitization: No sensitizing effects known.

· CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)

(e) **germ cell mutagenicity** : Mutagenicity: The substance was found to be non-mutagenic as per Ames test

(f) **carcinogenicity** : Not listed as a carcinogen by ACGIH, IARC, NIOSH, NTP, OSHA, or CA Prop 65

(g) **reproductive toxicity** The substance is not a reproductive toxin.

· Repeated dose toxicity

(h) STOT-single exposure: May cause respiratory irritation

(i) STOT-repeated exposure: Data not available

(j) aspiration hazard: Data not available

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SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

EC50 (96 hr) (static)	293 mg/L (<i>Pseudokirchneriella subcapitata</i>)
LC50 (24 hr) (static)	32 mg/L (<i>Daphnia magna</i>)
LC50 (48 hr)	71 mg/L (<i>Leuciscus idus melanotus</i>)
LC50 (96 hr) (static)	24.7 mg/L (<i>Lepomis macrochirus</i>)

· **12.2 Persistence and degradability** Not readily biodegradable

· **12.3 Bioaccumulative potential**

BCFs of 47 to 83 and 30 to 114 were measured for carp exposed to 200 and 20 ug/L of dibutyl ether over the course of a 6 week incubation period(1). According to a classification scheme(2), these BCFs suggest bioconcentration in aquatic organisms is moderate to high, provided the compound is not metabolized by the organism

· **12.4 Mobility in soil**

Using a structure estimation method based on molecular connectivity indices, the Koc for dibutyl ether can be estimated to be 51. According to a classification scheme, this estimated Koc value suggests that dibutyl ether is expected to have high mobility in soil.

· **Ecotoxicological effects:**

· **Remark:** Harmful to fish

· **Additional ecological information:**

· **General notes:**

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water Do not allow product to reach ground water, water course or sewage system. Danger to drinking water if even small quantities leak into the ground. Harmful to aquatic organisms

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Incinerate according to applicable local, state and federal regulations.

Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier

· **13.2 Uncleaned packaging:**

· **Recommendation:**

Disposal must be made according to official regulations.

Used ether containers, which are suspected of containing ether crystals or solids, are especially hazardous

SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN1149

· **14.2 UN proper shipping name**

· **ADR**

1149 DIBUTYL ETHERS

· **IMDG, IATA**

DIBUTYL ETHERS

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· 14.3 Transport hazard class(es)	
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids.
· Label	3
· 14.4 Packing group	
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	30
· EMS Number:	F-E,S-D
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Transport category	3
· Tunnel restriction code	D/E
· UN "Model Regulation":	UN1149, DIBUTYL ETHERS, 3, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- Labelling according to Regulation (EC) No 1272/2008
- Hazard pictograms Please refer section 2
- Signal word Warning
- Hazard statements Please refer section 2
- Precautionary statements Please refer section 2
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:** Product safety department.
- **Contact:**
Administrative office: Phone:91-22-25968361,91-22-25968362,91-22-25962457 Fax: 91-22-25958586

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 GHS: Globally Harmonized System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent

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· **Sources**

• **REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL 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**

• **Data from Hazardous Substance Data Bank**

<http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~YvwarG:1:FULL>

• **Data from US EPA EcoTox Database**

<http://cfpub.epa.gov/ecotox/report.cfm?type=short>

• **Data from MSDS of Merck KGaA**

http://www.merckmillipore.com/chemicals/en_US/Merck-IN-Site/INR/ViewProductDocuments-File?ProductSKU=MDACHEM-802892&DocumentType=MSD&DocumentId=&DocumentSource=&Country=GLOBAL&Channel=Merck-IN-Site&Language=EN

• **Data from RTECS Database**

<http://www.drugfuture.com/toxic/q35-q71.html>

· *** Data compared to the previous version altered.**

• **Section 2 - Hazard Identification**

• **Section 3 – Composition /Information on ingredients**

• **Section 4 - First Aid Measures**

• **Section 5 - Fire Fighting Measures**

• **Section 6 - Accidental Release Measures**

• **Section 7 - Handling and Storage**

• **Section 8 - Exposure Controls / Personal Protection**

• **Section 9 - Physical & Chemical Properties**

• **Section 10 – Stability and reactivity**

• **Section 11 - Toxicological Information**

• **Section 12 - Ecological Information**

• **Section 13 - Disposal Considerations**

• **Section 15 - Regulatory Information**

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