According to Regulation (EC) No 1907/2006 (REACH)

Substance Name : DI ETILEN GLIKOL (TICARI)

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1- Identification of the Substance/Mixture and the Company/Undertaking

1.1. Product Identifier

GHS product identifier : Diethylene glycol Chemical name : 2,2'-oxybisethanol

Other means of identification: bis(2-hydroxyethyl) ether; brecolane ndg; deactivator e; deactivator h; deg; dicol; diglycol; beta,beta'-dihydroxydiethyl ether; dissolvant apv; ethanol, 2,2'-oxydi-; ethylene diglycol; glycol ether; glycol ethyl ether; 3-oxapentane-1,5-diol; 3-oxa-1, 5-pentanediol; 2,2'-oxybisethanol; 2,2'-oxydiethanol; tl4n; diethylene glycol; 2, 2-dihydroxydiethyl ether

Product type : Liquid.

1.2. Details of the supplier of the safety data sheet:

KIVANÇ KIMYA SANAYI TICARET VE PAZARLAMA LIMITED IRKETI Adres: Istanbul Tuzla Kmya Sanaycleri Organze Sanay Bolges Melek Aras Bulvar Organik Cad. No: 57

Tuzla / Istanbul / TÜRKIYE

Telefon Numaras: +90 216 593 30 50 Fax numaras: +90 216 593 30 54

1.3. Emergency telephone number:

Company Telephone : 0090 212 866 49 00

National Poison Information Center: 114
Fire Department: 110
First Aid Center: 112

2- Hazards Identification

Classification of the substance or mixture: ACUTE TOXICITY: ORAL - Category 4 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE): ORAL [kidneys] - Category 2

2.1. Label elements

Hazard pictograms/symbols:

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Signal word: Warning

Hazard Statements:

Harmful if swallowed.

May cause damage to organs through prolonged or repeated exposure if swallowed. (kidneys)

Precautionary statements

Prevention: Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response: Get medical attention if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.

Storage: Store in accordance with all local, regional, national and international regulations.

Disposal: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification: None known.

3- Composition/Information on Ingredients

Substance/mixture : Substance

Chemical name : 2,2'-oxybisethanol

Other means of identification : bis(2-hydroxyethyl) ether; brecolane ndg; deactivator e;

deactivator h; deg; dicol; diglycol; beta,beta'-ihydroxydiethyl ether; dissolvant apv; ethanol, 2,2'-oxydi-; ethylene diglycol; glycol ether; glycol ethyl ether; 3-oxapentane-1,5-diol; 3-oxa-1, 5-pentanediol; 2,2'-oxybisethanol; 2,2'-oxydiethanol; tl4n;

diethylene glycol; 2, 2-dihydroxydiethyl ether

CAS number/other identifiers

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CAS number: 111-46-6 EC number: 203-872-2

CAS number	%	Ingredient name
111-46-6	>99.5	2,2'-oxybisethanol

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

4- First Aid Measures

4.1 Description of first aid measures

Eye contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell.

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact: Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion: Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an



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unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards. Inhalation: No known significant effects or critical hazards. Skin contact: No known significant effects or critical hazards.

Ingestion: Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact: No specific data. Inhalation: No specific data. Skin contact: No specific data. Ingestion: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist

immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without

suitable training. It may be dangerous to the person providing aid to

give mouth-to-mouth resuscitation.

5- Fire – Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire. Unsuitable extinguishing media: None known.

5.2 Special hazards arising from the substance or mixture

In a fire or if heated, a pressure increase will occur and the container may burst.

5.3 Hazardous thermal decomposition products

Decomposition products may include the following materials:

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carbon dioxide, carbon monoxide

5.4 Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

5.5 Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6- Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Note: see Section 1 for emergency contact information and Section 13 for waste disposal.



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7- Handling and Storage

7.1 Precautions for safe handling

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8- Exposure Controls / Personal Protection

8.1 Control parameters

Occupational exposure limits

Recommended monitoring procedures: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

<u>Appropriate engineering controls:</u> If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

<u>Environmental exposure controls</u>: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

<u>Hygiene measures:</u> Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated

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clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

<u>Eye/face protection:</u> Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists,

gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Recommended: safety glasses with side-shields

<u>Hand protection</u>: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates

this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber (> 0.30 mm), nitrile rubber (> 0.38 mm).

<u>Body protection</u>: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

<u>Respiratory protection</u>: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Recommended: organic vapour filter (Type A)

9- Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance

Physical state Colour : Liquid.
Colour : Colourless.

Odour : Odourless.

Odour threshold : Not available.

PH : Not available.

Melting point/freezing point : -6.5°C (20.3°F)

Boiling point : 245°C (473°F) Flash point : Closed cup: 138°C (280.4°F)



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Open cup: 123.85°C (254.9°F)

Evaporation rate : <0.01 (butyl acetate = 1)

Flammability (solid, gas) : Not available.

Burning time : Not applicable.

Burning rate : Not applicable.

Upper/lower flammability or : Lower: 1.8%

Upper/lower flammability or : Lower: 1.8% explosive limits Upper: 12.8%

Vapour pressure : 0.0008 kPa (0.006 mm Hg) [room temperature]

Vapour density : 3.66 [Air = 1]

Relative density : 1.11

Density : $1.11 \text{ g/cm}^3 [20^{\circ}\text{C}]$

Solubility(ies) :Easily soluble in the following materials: cold water.

Partition coefficient: n-octanol/: Not available.

water

Auto-ignition temperature : 229°C (444.2°F)

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Dynamic (room temperature): 42 mPa·s (42 cP)

Heat of combustion : -22.37 kJ/g

10- Stability and Reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

No specific data.

10.5 Incompatible materials

No specific data.

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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11- Toxicological Information

11.1 Information on toxicological effects

Acute toxicity

Exposure	Result	Species	Result	Exposure
4 hours	>4.6 mg/l	Rat	LC50 Inhalation	2,2'-oxybisethanol
-	13300 mg/kg	Rabbit	Dusts and mists	
-	19600 mg/kg	Rat	LD50 Dermal	
-	100 mg/kg	Rat	LD50 Oral	
			NOAEL Oral	

Irritation/Corrosion

Not available.

Sensitisation

Result	Species	Route of exposure	Product/ingredient name
Not sensitizing	Guinea pig	skin	2,2'-oxybisethanol

Conclusion/Summary

Non-sensitiser to skin.

Mutagenicity

Result	Experiment	Test	Product/ingredient
			name
Negative	Experiment: In vitro	EU B.4 B.4 Acute Toxicity:	2,2'-oxybisethanol
	Subject: Bacteria	Dermal Irritation/corrosion	
Negative	Experiment: In vitro	OECD 474 474	
	Subject: Mammalian-Animal	Mammalian Erythrocyte	
		Micronucleus Test	
Negative	Experiment: In vitro	OECD 473 473 In vitro	
	Subject: Mammalian-Animal	Mammalian Chromosomal	
		Aberration Test	

Carcinogenicity

Not available.

Reproductive toxicity

K.FR.05.102



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Exposure	Dose	Species	Developmental	Fertility	Maternal	Product/ingredient
			toxin		toxicity	name
-	Oral: 3060 g/kg	Mouse	Negative	Negative	Negative	2,2'-oxybisethanol
-	Oral: 2200 g/kg	Rat	Negative	Negative	Negative	

Teratogenicity

Exposure	Dose	Species	Result	Product/ingredient
				name
7 days per week	1 mg/kg	Rat	Negative - Oral	2,2'-oxybisethanol

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact
Inhalation
Skin contact
No known significant effects or critical hazards.
Skin contact
No known significant effects or critical hazards.

Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available. Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available. Potential delayed effects : Not available.

Potential chronic health effects

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Not available.

General : May cause damage to organs through prolonged or repeated exposure if swallowed.

Carcinogenicity: No known significant effects or critical hazards. Mutagenicity: No known significant effects or critical hazards. Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Not available.

Acute toxicity estimates

12- Ecological Information

12.1 Toxicity

Exposure	Species	Result	Product/ingredient
			name
24 hours	Daphnia - Daphnia magna	Acute EC50 >10000 mg/l Fresh water	2,2'-oxybisethanol
96 hours	Fish - Pimephales promelas	Acute LC50 75200 mg/l	

12.2 Persistence and degradability

Conclusion/Summary: Not available.

Biodegradability	Photolysis	Aquatic half-life	Product/ingredient
			name
-	50%; 0.72 day(s)	-	2,2'-oxybisethanol

12.3 Bioaccumulative potential

Potential	BCF	LogPow	Product/ingredient name
low	100	-1.98	2,2'-oxybisethanol

12.4 Mobility in soil

Soil/water partition : 1

12.6 Other adverse effects : No known significant effects or critical hazards.

13- Disposal Considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental



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protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14- Transport Information

	UN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper	-	-	-
shipping name			
14.3 Transport	-	-	-
hazard class(es)			
14.4 Packing	-	-	-
group			
14.5	No.	No.	No.
Environmental			
hazards			
Additional	-	-	-
information			

14.6 Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. 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 73/78 and the IBC Code

Proper shipping name: Diethylene Glycol

Pollution category: Z

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15- Regulatory Information

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

No known specific national and/or regional regulations applicable to this product (including its ingredients).

Chemical Weapons Convention List Schedule I Chemicals: Not listed Chemical Weapons Convention List Schedule II Chemicals: Not listed Chemical Weapons Convention List Schedule III Chemicals: Not listed

15.2 National Fire Protection Association (U.S.A.)

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16- Other Information

History

Date of printing : 13.09.2017 Date of issue/Date of revision : 13.09.2017 Date of previous issue : 13.09.2017

Version : 1

Key to abbreviations:

ADN = European Provisions concerning the International Carriage of Dangerous

Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of

Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

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IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL 73/78 = International Convention for the Prevention of Pollution From

Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

RID = The Regulations concerning the International Carriage of Dangerous Goods

by Rail

UN = United Nations

References: Not available.

Indicates information that has changed from previously issued version.

Technical information:

NOTE:

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