

**SAFETY DATA SHEET****EFOX 101**

COMMISSION REGULATION (EU) 2015/830 of 28 May 2015.

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

**Product name** EFOX 101  
**Chemical name** 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane

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

**Identified uses** Industrial use  
**Uses advised against** No specific uses advised against are identified.

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

**Manufacturer** AKPA KİMYA AMBALAJ SANAYİ VE TİCARET ANONİM ŞİRKETİ  
Yenibosna Merkez Mah. Ladin Sok. No:36/70 Kat:12 34197  
Townofis Bahçelievler, İstanbul, TÜRKİYE  
Web: www.akpakimya.com  
TEL: +90 212 580 55 59  
FAX: +90 212 580 55 21  
E-mail: info@akpakimya.com  
**Contact person** Export Department - export@akpakimya.com

**1.4. Emergency telephone number**

**Emergency telephone** CHEMTREC: TOLL Free 1-800-424-9300 / Local: +1-703-527-3887  
**For product information** AKPA KİMYA: +90 549 558 40 40

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

**Classification (EC 1272/2008)**  
**Physical hazards** Org. Perox. C - H242  
**Health hazards** Skin Irrit. 2 - H315  
**Environmental hazards** Not Classified.

**2.2. Label elements****Pictogram****Signal Word****Hazard statements****Danger**

**H242** Heating may cause a fire.  
**H315** Causes skin irritation.

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**Precautionary statements****P220** Keep away from acids, alkalis, heavy metal compounds, oxidizing material, combustible materials.**P280** Wear protective gloves/protective clothing/ eye protection/ face protection.**P302+P352** IF ON SKIN: Wash with plenty of soap and water.**P332+P313** If skin irritation occurs: Get medical advice/attention.**P362** Take off contaminated clothing and wash before reuse.**P411+P235** Store at temperatures between (+10) - (+40)°C. Keep cool.**P501** Dispose of contents/ container in accordance with national regulations.**Commission Regulation (EU) No 2015/830 of 28 May 2015.****Contains**

Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide

**2.3. Other hazards**

This substance is not classified as PBT or vPvB according to current EU criteria.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide		%90-100	
<b>CAS Number</b>	<b>78-63-7</b>	<b>EC Number</b>	<b>201-128-1</b>
<b>Classification</b>			
Org. Perox. D	H242		
Skin Irrit. 2	H315		

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

Remove affected person from source of contamination. Get medical attention if any discomfort continues.

**Inhalation**

Move injured person into fresh air and keep person calm under observation. If uncomfortable: Seek hospital and bring these instructions. NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.

**Ingestion**

Immediately rinse mouth and drink plenty of water. DO NOT induce vomiting. If vomiting occurs, the head should be kept low so that

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stomach vomit doesn't enter the lungs. Get medical attention immediately!

**Skin contact**

Remove victim immediately from source of exposure. Immediately remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.

**Eye contact**

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Get medical attention promptly if symptoms occur after washing.

**Protection of first aiders**

First aid personnel should wear appropriate protective equipment during any rescue. Wash contaminated clothing thoroughly with water before removing it from the affected person, or wear gloves. It may be dangerous for first aid personnel to carry out mouth-to-mouth resuscitation.

**4.2. Most important symptoms and effects, both acute and delayed****General information**

See Section 11 for additional information on health hazards. The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation**

Nausea, vomiting. Dizziness.

**Ingestion**

May cause stomach pain or vomiting.

**Skin contact**

Prolonged skin contact may cause redness and irritation.

**Eye contact**

May cause temporary eye irritation.

**4.3. Indication of any immediate medical attention and special treatment needed****Notes for the doctor**

Treat symptomatically. May cause sensitization or allergic reactions in sensitive individuals.

**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable extinguishing media**

Extinguish with alcohol-resistant foam, carbon dioxide, dry powder.

**Unsuitable extinguishing Media**

Halon. Direct water jet.

**5.2. Special hazards arising from the substance or mixture**

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<b>Specific hazards</b>	In case of fire, toxic gases may be formed. Vapours may form explosive air mixtures even at room temperature. Containers can burst violently when heated, due to excess pressure build-up.
<b>Hazardous decomposition products</b>	Fire causes formation of toxic gases. Forms explosive mixtures with air. May explode when heated or when exposed to flames or sparks.
<b>5.3. Advice for firefighters</b> <b>Protective actions during firefighting</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Face mask, protective gloves and safety helmet.
<b>Special protective equipment for firefighters</b>	Use pressurised air mask if product is involved in a fire. Cool containers exposed to flames with water until well after the fire is out. If possible, fight fire from protected position. Move container from fire area if it can be done without risk. Avoid water in straight hose stream; will scatter and spread fire. Keep run-off water out of sewers and water sources. Dike for water control. If risk of water pollution occurs, notify appropriate authorities.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****Personal precautions**

Wear protective clothing as described in Section 8 of this safety data sheet. No smoking, sparks, flames or other sources of ignition near spillage. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

**6.2. Environmental precautions****Environmental precautions**

Do not discharge into drains, water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

**6.3. Methods and material for containment and cleaning up****Methods for cleaning up**

Keep combustibles away from spilled material. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Dike far ahead of larger spills for later disposal. Absorb in vermiculite, dry sand or earth and place into containers. Wash thoroughly after dealing with a spillage.

**6.4. Reference to other sections****Reference to the other sections**

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

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## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

#### Usage precautions

Keep away from heat, sparks and open flame. Avoid inhalation of vapours/spray and contact with skin and eyes. Provide adequate ventilation. Avoid inhalation of vapours. Use approved respirator if air contamination is above an acceptable level. Do not handle broken packages without protective equipment.

#### Advice on general occupational hygiene

Eye wash facilities and emergency shower must be available when handling this product. Good personal hygiene is necessary. Wash hands and contaminated areas with water and soap before leaving the work site. Do not eat, drink or smoke when using the product. Observe good chemical hygiene practices. Mechanical ventilation or local exhaust ventilation may be required. Container must be kept tightly closed. Protect against direct sunlight.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Storage precautions

Keep away from oxidisers, heat and flames. Store in tightly closed original container in a dry, cool and well-ventilated place. Avoid contact with oxidising agents. Store away from: Acids. Alkalis. Heavy metal compounds. Oxidising material - Keep away from flammable and combustible materials. Store in closed original container at temperatures between (+10) - (+40)°C. Provide an adequate ventilation system.

### 7.3. Specific end use(s)

#### Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure Controls/personal protection

### 8.1. Control Parameters

#### Occupational exposure limits

No exposure limits noted for ingredient(s).

#### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide	Workers	Inhalation	Long-term systemic effects	11 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	15 mg/kg

#### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

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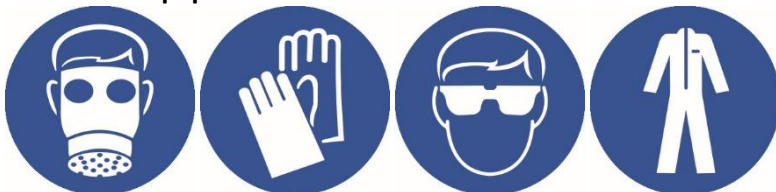
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Substance name	Environmental Compartment	Value
Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide	Fresh water	0,0065 mg/l
	Marine water	0,00065 mg/l
	Fresh water sediment	72,2 mg/kg
	Marine sediment	7,22 mg/kg
	Sewage treatment plant	100 mg/l
	Soil	14,4 mg/l

### 8.2. Exposure controls

#### Protective equipment



#### Appropriate engineering controls

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded. All handling to take place in well-ventilated area.

#### Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Personal protective equipment for eye and face protection should comply with European Standard EN166. Wear tight-fitting, chemical splash goggles or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

#### Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. To protect hands from chemicals, gloves should comply with European Standard EN374. Considering the data specified by the glove manufacturer, check during use that the gloves are retaining their protective properties and change them as soon as any deterioration is detected. Frequent changes are recommended.

#### Other skin and body protection

Appropriate footwear and additional protective clothing complying with an approved standard should be worn if a risk assessment indicates skin contamination is possible.

#### Hygiene measures

DO NOT SMOKE IN WORK AREA! Wash hands at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Isolate contaminated

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clothing and wash before reuse. Remove contaminated clothing and wash the skin thoroughly with soap and water after work. Wash promptly with soap & water if skin becomes contaminated.

**Respiratory protection**

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Wear suitable mask. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'- marked. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with European Standard EN14 387 and EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

**Environmental exposure controls**

Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

**SECTION 9: Physical and Chemical Properties****9.1. Information on basic physical and chemical properties**

Appearance	Clear liquid.
Colour	Colorless.
Odour	Characteristic.
Melting point	Not available.
Flash point	No data available.
Bulk density	Not available.
Density	0,870 ± 0,01 gr/cm <sup>3</sup> @20°C
Solubility(ies)	No data available.
Viscosity	6,4 mPa.s (20°C)

**9.2. Other information**

Active Oxygen Content	Min. 10,14 %
SADT	80°C

**SECTION 10: Stability and reactivity****10.1. Reactivity**

**Reactivity** There are no known reactivity hazards associated with this product.

**10.2. Chemical stability**

**Stability** Stable under normal temperature conditions.

**10.3. Possibility of hazardous reactions**



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<b>Possibility of hazardous reactions</b>	Will not polymerise.
<b>10.4. Conditions to avoid</b> <b>Conditions to avoid</b>	Avoid excessive heat for prolonged periods of time. Keep away from heat, sparks, open flames or hot surfaces. – No smoking.
<b>10.5. Incompatible materials</b> <b>Materials to avoid</b>	Strong acids. Strong reducing agents. Bases, alkalis (organic). Organic peroxides/hydroperoxides.
<b>10.6. Hazardous decomposition products</b> <b>Hazardous decomposition Products</b>	During fire, toxic gases (CO, CO <sub>2</sub> ) are formed.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

<b>Toxicological information</b>	The product is not tested.
<b>Serious eye damage/irritation:</b> <b>Skin corrosion/irritation:</b>	Based on available data the classification criteria are not met. Based on available data the classification criteria are not met.
<b>Respiratory or skin sensitisation:</b> <b>Respiratory sensitisation</b> <b>Skin sensitisation</b>	Based on available data the classification criteria are not met. May cause an allergic skin reaction.
<b>Germ cell mutagenicity:</b> <b>Carcinogenicity:</b>	Based on available data the classification criteria are not met. Based on available data the classification criteria are not met.
<b>Reproductive Toxicity - Fertility</b> <b>Reproductive Toxicity – Development</b>	Based on available data the classification criteria are not met. Based on available data the classification criteria are not met.
<b>Specific target organ toxicity - single exposure:</b> STOT - Single exposure	Based on available data the classification criteria are not met.
<b>Specific target organ toxicity - repeated exposure:</b> STOT - Repeated exposure	Based on available data the classification criteria are not met.
<b>Aspiration Hazard</b>	Based on available data the classification criteria are not met.
<b>Inhalation</b>	In high concentrations, vapours may irritate throat and respiratory system and cause coughing.
<b>Ingestion</b>	May cause discomfort if swallowed. May cause stomach pain or vomiting.



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**Skin contact** Prolonged and frequent contact may cause redness and irritation.  
Irritating to skin.

**Eye contact** May cause temporary eye irritation.

**Toxicology Data For The Ingredients:****di-tert butyl peroxide**

Acute oral toxicity

LD50: &gt;2,000 mg/kg

Species: Rat

Acute dermal toxicity

LD50: 4,100 mg/kg

Species: Rabbit

**SECTION 12: Ecological Information****12.1. Toxicity****Ecological information on ingredients.****Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide****Toxicity to fish**

LC50, 96h (Oryzias latipes (Orange-red killifish)): 4.5 mg/l

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)**

NOEC, 21d: &gt; 0.02 mg/l

**Toxicity to algae**

EC50, 72h (Pseudokirchneriella subcapitata (green algae)): 6.17 mg/l

NOEC, 72h (Pseudokirchneriella subcapitata (green algae)): 1.88 mg/l

**Toxicity to microorganisms**

EC50, 3h (Bacteria): &gt;1,000 mg/l

**12.2. Persistence and degradability****Persistence and degradability**

There are no data on the degradability of this product.

**12.3. Bio accumulative potential****Bio accumulative potential**

No data available on bioaccumulation.

**12.4. Mobility in soil****Mobility**

The product is partly miscible with water and may spread in the aquatic environment.

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

This product does not contain any substances classified as PBT or vPvB.

**12.6. Other adverse effects****Other adverse effects**

Not known.

**SECTION 13: Disposal considerations**

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#### 13.1. Waste treatment methods

##### General information

Waste to be treated as controlled waste. Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority. When handling waste, consideration should be made to the safety precautions applying to handling of the product

##### Disposal methods

Dispose of waste and residues in accordance with local authority requirements. Make sure containers are empty before discarding (explosion risk). Environmental manager must be informed of all major spillages.

### SECTION 14: Transport information

#### General information

For limited quantity packaging/limited load information, consult the relevant modal documentation using the data shown in this section.

#### 14.1. UN number

UN No. (ADR/RID)	3103
UN No. (IMDG)	3103
UN No. (ICAO)	3103
UN No. (ADN)	3103

#### 14.2. UN proper shipping name

Proper Shipping name(ADR/RID)	ORGANIC PEROXIDE TYPE C, LIQUID (Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide)
Proper Shipping name (IMDG)	ORGANIC PEROXIDE TYPE C, LIQUID (Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide)
Proper Shipping name (ICAO)	ORGANIC PEROXIDE TYPE C, LIQUID (Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide)
Proper Shipping name (ADN)	ORGANIC PEROXIDE TYPE C, LIQUID (Di-tert-butyl 1,1,4,4-tetramethyltetramethylene diperoxide)

#### 14.3. Transport hazard class(es)

ADR/RID class	5.2
ADR/RID label	5.2
IMDG class	5.2
ICAO class/division	5.2
ADN class	5.2

#### Transport labels

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**14.4. Packing group**

Not applicable.

**14.5. Environmental hazards****Environmentally hazardous substance/marine pollutant**

No.

**14.6. Special precautions for user**

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.

**EmS**

F-J, S-R

**Emergency Action Code**

2WE

**Tunnel restriction code**

(D)

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

No data available.

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

Health and Safety at Work etc. Act 1974 (as amended). The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (SI 2009 No. 1348) (as amended) ["CDG 2009"]. EH40/2005 Workplace exposure limits.

**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).

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**

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**Key literature references and sources for data**

This SDS is prepared based on the information received from the product owner.

**Classification procedures according to Regulation (EC) 1272/2008**

Skin Irrit. 2 - H315: Calculation Method. Org. Perox. C - H242: Expert Judgement

**Training advice**

Read and follow manufacturer's recommendations. Only trained personnel should use this material.

**Revision comments**

The SDS is generated in accordance with the 1907/2006 REACH and 1272/2008 CLP regulations.

**Issued By**

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**Issued Date**

05.03.2014

**Revision date**

27.05.2019

**Revision**

1.0

**Hazard statements in full****H242**

Heating may cause a fire.

**H315**

Causes skin irritation.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. 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.