

## SECTION 1: NAME OF SUBSTANCE AND COMPANY

### 1.1 Product Identification

**Name of Substance:** Isomerizate

**EC No.** 265-073-5

**REACH Registration No.** 01-2119480399-24-0011

**CAS No.** 64741-70-4

### 1.2 Product Use:

Established use: fuel

### 1.3 Detailed Information on MSDS Supplier

#### Manufacturer:

Public Company *ORLEN Lietuva*

Juodeikiai, LT-89467 Mažeikiai District, Lithuania

Tel.: (370) 443 92121

Telefax: (370) 443 92525

E-mail address: info@orlenlietuva.lt

### 1.4 Emergency telephone:

Public Company ORLEN Lietuva (24 hours a day): 370 443 92510

Poison Center (24 hours a day): +37052362052, mob. +370 687 53378

## SECTION 2: POSSIBLE HAZARDS

### 2.1 Classification of Substance

#### Classification according to Regulation (EC) No. 1272/2008:

Flam. Liq. 1, H224

Asp. Tox. 1, H304

Skin Irrit. 2, H315

STOT SE 3, H336

Repr. 2, H361

Aquatic Chronic 2, H411

### 2.2 Labelling

#### Labelling and classification according to Regulation (EC) No. 1272/2008

#### Signal word:

DANGER.

#### Hazard pictograms



GHS02



GHS08



GHS07



GHS09

#### Hazard statements:

H224: Extremely flammable liquid and vapour.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H336: May cause drowsiness or dizziness.

H361: Suspected of damaging fertility or the unborn child.

H411: Toxic to aquatic life with long lasting effects.

Substance **ISOMERIZATE****Precautionary statements:**

P201: Obtain special instructions before use.

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P273: Avoid release to the environment.

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

P331: Do NOT induce vomiting.

P301+P310: IF SWALLOWED: Immediately call a Poison Center or doctor/physician.

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

**2.3 Other hazards**

Isomerizate is extremely flammable liquid which may generate explosive mixtures of hydrocarbon vapours and air at ambient temperatures.

Vapour is irritating to skin, eyes and respiratory tract. Liquid product splashes irritate eyes and skin.

Toxic to aquatic organisms. May cause long-term adverse effects to aquatic environment. Risk of soil and ground water contamination.

**SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS****Chemical composition:**

Isomerizate.

**3.1 Components according to Regulation (EC) No. 1272/2008:**

Component name	CAS No.	EC No.	Concentration, % m/m
Isomerizate	64741-70-4	265-073-5	Up to 100

**SECTION 4: FIRST-AID MEASURES****4.1 Description of first aid measures****General Information**

Before attempting to rescue casualties, isolate area from all potential sources of ignition including disconnecting electrical supply. Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces.

Drench contaminated clothing with water before removing to avoid risk of sparks from static electricity.

**Inhalation**

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If the casualty is unconscious and:

- Not breathing – ensure that there is no obstruction to breathing and give artificial respiration by trained personnel. If necessary, give external cardiac massage and obtain medical assistance.

- Breathing – place in the recovery position and keep the head below the level of the torso. Administer oxygen if necessary.

Obtain medical attention if casualty has an altered state of consciousness or if symptoms do not resolve.

**Skin Contact**

Immediately remove contaminated clothing and footwear and dispose of safely. Wash affected area thoroughly with soap and water. Seek medical attention if skin irritation, swelling or redness develops and persists.

When using high-pressure equipment, injection of product can occur. If high-pressure injuries occur, immediately seek professional medical attention. Do not wait for symptoms to develop. For minor thermal burns: Cool the burn. Hold the burned area under cold running water for at least five minutes, or until the pain subsides. However, body hypothermia must be avoided.

**Eye Contact**

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. If irritation, blurred vision or swelling occurs and persists, obtain medical advice from a specialist.

**Ingestion**

The casualty should be sent immediately to a hospital. Do not wait for symptoms to develop. Do not induce vomiting, as there is high risk of aspiration (chemical pneumonia). Gastric lavage should be undertaken only after endotracheal intubation.

Do not give anything by mouth to an unconscious person.

**4.2 Most important symptoms and effects**

Inhalation of vapours may cause headache, nausea, vomiting and an altered state of consciousness. Skin contact – reddening, irritation. Eye contact – slight irritation (unspecific). Ingestion – few or no symptoms expected. If any, nausea and diarrhoea might occur. In case of ingestion, always assume that aspiration has occurred.

**4.3 Information to doctor or other competent person providing first aid.**

Treatment according to symptoms. In case of ingestion, always assume that aspiration has occurred.

**SECTION 5: FIRE-FIGHTING MEASURES****Flammability**

Extremely flammable liquid.

**5.1 Extinguishing Media****Suitable Extinguishing Media**

- Foam (specifically trained personnel only),
- Water fog (specifically trained personnel only),
- Dry chemical powder,
- Carbon dioxide,
- Inert gases (subject to regulations),
- Sand or earth,
- Steam.

**Unsuitable Extinguishing Media**

Do not use direct water jets on the burning product; they could cause splattering and spread the fire. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam.

**5.2 Hazards arising from the substance****Combustion Products**

Incomplete combustion is likely to give rise to a complex mixture of airborne solid and liquid particulates and gases, including carbon monoxide and unidentified organic and inorganic compounds.

**Specific Hazards**

If tanks or containers with product are exposed to fire, there is danger of explosion due to increased pressure inside the vessel. If spillage of product occurs, the mixture of hydrocarbon vapours and air may explode or ignite on sparks or heated surfaces. Tanks and containers with product, which are in the direct vicinity of the fire, should be cooled by water jets from the safe distance.

**5.3 Protective Equipment for Fire-fighters**

Use adequate breathing apparatus, self-contained gas masks and impervious protective clothes. In case of a large fire or in confined or poorly ventilated spaces wear full fire resistant protective clothing and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**SECTION 6: ACCIDENTAL RELEASE MEASURES****6.1 Personal Protective Equipment and Emergency Procedures**

Small spillages: normal antistatic working clothes are usually adequate. Large spillages: full body suit of chemically resistant and antistatic material. Work gloves providing adequate chemical resistance, specifically to aromatic hydrocarbons.

NOTE: gloves made of PVA are not water-resistant, and are not suitable for emergency use.

Work helmet. Antistatic non-skid safety shoes or boots. Goggles or face shield, if splashes or contact with eyes is possible or anticipated.

Respiratory protection: A half or full-face respirator with filter(s) for organic vapours or a Self Contained Breathing Apparatus (SCBA) can be used according to the extent of spill and predictable amount of exposure. If the situation cannot be completely assessed, or if an oxygen deficiency is possible, only SCBA's should be used.

Isomerizate is volatile liquid with very low flash point, any spillage or leak is severe fire or explosion hazard. Stop or contain leak at the source if safe to do so. Avoid direct contact with released material. Stay upwind. In case of large spillages, alert residents in downwind areas. Keep non-involved personnel away from the area of spillage. Alert emergency personnel. Except in case of small spillages, the feasibility of any actions should always be assessed and advised, if possible, by a trained, competent person in charge of managing the emergency. Eliminate all ignition sources if safe to do so (e.g. electricity, sparks, fires, flares).

If required, notify relevant authorities according to all applicable regulations.

**6.2 Environmental Measures****Spillages on to Land**

Stop leak at the source if safe to do so. Prevent product from entering sewers, rivers, waterways or other bodies of water. If necessary, dike the product with dry earth, sand or similar non-combustible materials. Large spillages may be cautiously covered with foam, if available, to limit fire risk. Do not use direct jets.

When inside buildings or confined spaces, ensure adequate ventilation.

**Spillages on Water or at Sea**

Stop leak at the source if safe to do so. In case of small spillages in closed waters (i.e. ports), contain product with floating barriers or other equipment. If possible, large spillages in open waters should be contained with floating barriers or other mechanical means.

**6.3 Cleaning Methods and Procedures****Spillages on to Land**

Absorb spilled product with suitable non-combustible materials. Collect free product with suitable means. Transfer collected product and other contaminated materials to suitable containers for recycle, recovery or safe disposal.

In case soil contamination, remove contaminated soil and treat this in accordance with local regulations.

**Spillages on Water or at Sea**

Collect spilled product by absorbing with specific floating absorbents. Mechanical means may recover, only if this is strictly necessary and if fire/explosion risks can be adequately prevented.

Otherwise control the spreading of the spillage, and let the substance evaporate naturally. The use of dispersants should be advised by an expert, and, if required, approved by local authorities. Collect recovered product and other materials in suitable tanks or containers for recovery or safe disposal.

**Additional Information**

NOTE: Recommended measures are based on the most likely spillage scenarios for this material; however, local conditions (wind, air temperature, wave/current direction and speed) may significantly influence the choice of appropriate actions. For this reason, local experts should be consulted when necessary. Local regulations may also prescribe or limit actions to be taken.

Spillages of limited amounts of products, especially in the open air when vapours will be usually quickly dispersed, are dynamic situations, which are unlikely to entail exposure to dangerous concentrations. However, the build-up of dangerous concentrations may occur in specific spots, like trenches, depressions or confined spaces. In all these circumstances, however, the correct actions should be assessed on a case-by-case basis.

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

Avoid release to the environment. Risk of explosive mixtures of vapour and air. Ensure that all relevant regulations regarding explosive atmospheres, and handling and storage facilities of flammable products, are followed.

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Use and store only outdoors or in a well-ventilated area. Avoid contact with the product.

**7.2 Conditions for safe storage and handling****Handling**

During product transfer activities (loading and unloading of mobile tanks) and during sampling there is a risk of static electrical discharge, therefore precautionary measures against static electricity shall be taken.

Adequate hermetic mobile tanks should be used for isomerizate transportation. Use only bottom loading of tanks/tankers/containers in compliance with European legislation. Do not use compressed air for filling, discharging, or handling operations.

Ground/bond containers, tanks and transfer/receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools.

The vapour is heavier than the air. Beware of accumulation in pits and confined spaces. Use personal protective equipment. Avoid contact with skin and eyes. Do not ingest. Avoid breathing vapours.

**Storage**

Storage area layout, tank design, equipment and operating procedures must comply with the relevant European, national or local legislation. For product storage tanks or containers with floaters (pontoons), which are suitable for storage of extremely flammable liquids, shall be used.

Storage installations should be designed with adequate bunds so as to prevent ground and water pollution in case of leaks or spills.

Cleaning, inspection and maintenance of internal structure of storage tanks must be done only by properly equipped and qualified personnel as defined by national, local or company regulations. Before entering storage tanks and commencing any operation in a confined area check the atmosphere for oxygen content and flammability.

Isomerizate vapours can build up in the headspace of tanks that may cause flammability/explosion hazards; therefore static electrical discharge and ignition sources should be avoided when measuring product level or sampling in the tanks.

Store separately from oxidising agents.

**Recommended and Unsuitable Materials for Storage**

Recommended materials: For containers (tanks), or container linings use mild steel, stainless steel.

Unsuitable materials: some synthetic materials may be unsuitable for containers or container linings depending on the material specification and intended use. Compatibility should be checked with the manufacturer.

**Container Advice If the Product is Supplied in Containers**

Keep only in the original container or in a suitable container for this kind of product. Keep containers tightly closed and properly labelled. Protect from the sunlight.

Light hydrocarbon vapours can build up in the headspace of containers. These can cause flammability/explosion hazards. Empty containers may contain flammable product residues. Do not weld, solder, drill, cut or incinerate empty containers, unless they have been properly cleaned.

**7.3 Specific end use**

Isomerizate is used as a fuel in spark-ignition (gasoline) internal combustion engines.

**SECTION 8: EXPOSURE CONTROL/ PERSONAL PROTECTION****8.1 Control parameters****Exposure Limits**

National occupational exposure limits allowed should be observed. Where not established, the following short-term exposure limit is recommended – 350 mg/m<sup>3</sup>.

**8.2 Exposure controls****8.2.1 Technical measures**

During various technical and process operations isomerizate vapour may be emitted into the environment, therefore the concentration in working environment air shall be controlled to the minimum allowed limit.

**8.2.2 Personal Protective Equipment:****Respiratory Protection**

If during operations the exposure of employees to large amounts of product vapour and gas is inevitable, suitable respiratory protective equipment, such as A2 filtering mask or analogous should be applied (e.g. according to EN 14387). When working in vessel internals or other confined spaces **do not** use filtering masks but the special self-contained protective equipment. Respiratory protection equipment should be selected and used in accordance with the manufacturer's instructions and requirements established by the law.

**Eye Protection**

Wear safety glasses in circumstances where eye contact may occur (e.g. acc. to EN 166).

**Skin and Body Protection****Hand Protection**

Wear petroleum product resistant gloves (e.g. acc. to EN 420, EN 388, EN 374-2, EN 374-3).

**Other Protective Measures**

It is necessary to wear protective clothes (e.g. acc. to EN 465) and other protection equipment. Protective clothing should be regularly inspected and maintained.

**Special Hygienic Recommendation**

Wash hands before breaks and after work.

**8.2.3 Environmental Impact Control**

To ensure the compliance of ventilation and process equipment with requirements of environmental legal acts, emissions of such equipment are subject to check ups. In some cases vapour filtering

installations or process equipment modifications may be necessary for the reduction of emission to allowed limit.

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

<b>Appearance</b>	clear, colourless liquid with low viscosity.
<b>Odour</b>	liquid with a typical odour of hydrocarbons.
<b>pH</b>	insignificant information.
<b>Freezing point</b>	below minus 20 °C.
<b>Distillation temperature range</b>	30 – 115 °C.
<b>Flash point</b>	below 0 °C.
<b>Explosion concentration in air</b>	1,0 – 6,0 % vol.
<b>Vapour pressure</b>	45 – 100 kPa.
<b>Vapour density rel. to air</b>	3 – 4.
<b>Density at 15 °C</b>	max 700 kg/m <sup>3</sup> .
<b>Solubility in water</b>	water insoluble.
<b>Auto-ignition temperature</b>	> 290 °C.
<b>Kinematic viscosity at 40 °C</b>	< 1 mm <sup>2</sup> /s.

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

No hazardous reaction when handled and stored according to provisions.

**10.2 Stability**

Stable at ambient temperature.

**10.3 Possibility of hazardous reactions**

No known hazardous reactions.

**10.4 Conditions to Avoid**

High ambient temperature.

Avoid static electrical discharges and other ignition sources.

**10.5 Materials to Avoid**

Avoid contact with strong oxidizing agents.

**10.6 Hazardous Decomposition Products**

Thermal decomposition products vary depending on conditions.

Partial decomposition produces fume, carbon dioxide, carbon monoxide and other harmful gases.

Toxic gas concentration in a confined space or premises may reach a hazardous limit.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Sources of Exposure**

Isomerizate may affect human body through skin, if inhaled and swallowed.

**Acute toxicity**

Experimental acute toxicity data:

Acute oral LD<sub>50</sub> > 5000 mg/kg,

Acute inhalation LC<sub>50</sub> > 5600 mg/m<sup>3</sup>,

Acute dermal LD<sub>50</sub> > 2000 mg/kg.

**Prolonged and sub-chronic toxicity**

Experimental chronic toxicity data:

Short-term repeat dose dermal NOAEL 3750 mg/kg/day,

Short-term repeat dose inhalation NOAEL 9840 mg/m<sup>3</sup>,

Sub-chronic repeat dose inhalation NOAEL 20000 mg/m<sup>3</sup>.

**Acute Health Effects**

Vapour of low concentration is slightly irritating to eyes and respiratory system. The liquid product, when in contact with the eyes, may cause transient eye stinging or redness, and if splashed on the skin, it may slightly irritate and dry the skin.

Unlikely to cause harm if swallowed in small amounts, though larger quantities may cause nausea and diarrhoea. In case of ingestion assume that aspiration has occurred.

**Chronic Health Effects**

Prolonged or repeated isomerizate contact with skin may cause nausea, dizziness, headache and drowsiness; possible chemical pneumonitis.

**Reproductive Toxicity**

Experimental data inhalation: NOAEC > 20000 mg/m<sup>3</sup>.

NOTE. Isomerizate handling under typical conditions does not pose a toxicological hazard; however, even a short deliberate inhalation of large quantity of high concentration gasoline vapour may cause loss of consciousness.

**SECTION 12: ECOLOGICAL INFORMATION**

**12.1 Ecotoxicity**

Isomerizate is harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Spills may form a film on water surfaces causing physical damage to aquatic life.

Experimental data:

Acute aquatic invertebrate EL<sub>50</sub> 4,5 mg/l,

Acute aquatic algae EL<sub>50</sub> 3,1 mg/l,

Acute aquatic fish LL<sub>50</sub> 8,2 mg/l,

Long-term aquatic invertebrate NOEC<sub>50</sub> 2,6 mg/l.

**12.2 Durability and Degradability**

The product is inherently biodegradable. Volatile hydrocarbons disperse in the atmosphere.

**12.3 Bio-accumulative Potential**

Heavier hydrocarbons of the product are possibly accumulative in aquatic organisms.

**12.4 Mobility**

Spillage, depending on the ambient temperatures, may evaporate in significant quantities, and the rest of the spilled product may penetrate the soil and contaminate ground waters.

**12.5 Results of PBT and vPvB assessment**

This substance no contains representative hydrocarbons structure were found to meet the PBT or vPvB.

**SECTION 13: WASTE MANAGEMENT**

**13.1 Waste Disposal Methods**

Waste is disposed of by de-harming it in accordance with national requirements and local regulations or via a licensed waste disposal contractor. Identify the hazards of waste handling and undertake required safety measures. Personal protective equipment is necessary for waste managing personnel.



Substance **ISOMERIZATE**

Empty tanks and tank cars may contain some remaining product; therefore, hazard-warning labels are to be retained as a guide to the safe tank handling and waste disposal. Empty containers represent a fire hazard as they may contain flammable product residues and vapour.

**SECTION 14: TRANSPORT INFORMATION**

<b>14.1 UN number</b>	1203
<b>14.2 UN proper shipping name</b>	UN 1203, Gasoline, 3, II.
<b>14.3 Transport hazard class</b>	3
<b>14.4 Packing group</b>	II
<b>14.5 Environmental hazard</b>	Environmentally hazardous, sea pollutant.
<b>14.6 Special precautions for users</b>	Not applicable.
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	No date.

**SECTION 15: REGULATORY INFORMATION****15.1 Legislation****Lithuanian:**

Commission Regulation (EU) No. 2015/830; Commission Regulation (EU) No. 453/2010; Regulation (EC) No. 1907/2006 of the European Parliament and of the Council; Regulation (EC) No. 1272/2008 of the European Parliament and of the Council; Law on Chemical Substances and Preparations of the Republic of Lithuania (*Official Gazette (Valstybės Žinios)*, 2000, No. 36-987; 2004, No. 116-4329; 2005, No. 79-2846; 2006, No. 65-2381; 2008, No. 76-3000); Order No. 532/742; 2010, Nr. 145-7434; 2010, Nr. 157-7967; 2012, Nr. 132-6648; Teisės aktų registras, Nr. 2015-11085); Law of the Republic of Lithuania on Packing and Packing Wastes Management (*Official Gazette*, 2001, No. 85-2968; 2005, No.86-3206; 2008, No.71-2699; 2011, Nr. 138-6526; 2012, Nr. 6-191; 2013, Nr. 110-5429; 2013, Teisės aktų registras, Nr. 2014-00038; Nr. 2014-05579; Nr. 2016-00088); Lithuanian Hygienic Norm HN 23:2011 „Concentration Limit Values of Hazardous Chemicals in Working Environment Air. General Requirements“ (*Official Gazette*, 2011, Nr. 38-1804) approved by Order No. V-824/A1-389 of the Minister of Health Care and the Minister of Social Security and Labour of the Republic of Lithuania on 1 September 2011.

**15.2 Chemical Safety Assessment**

Isomerizate chemical safety assessment has been conducted.

**SECTION 16: OTHER INFORMATION**

The Material Safety Data Sheet has been reviewed and the data therein were revised and laid out according the requirements of the Commission Regulation (EU) No. 2015/830.

**Abbreviations and acronyms**

CAS	Chemical Abstracts Service
EC No	EINECS and ELINCS Number
EL <sub>50</sub>	Effect Level to 50 % of a test population
EN	European Standard
EU	European Union
LC <sub>50</sub>	Lethal Concentration to 50 % of a test population

Substance **ISOMERIZATE**

LD <sub>50</sub>	Lethal Dose to 50% of a test population (Median Lethal Dose)
LL <sub>50</sub>	Lethal Level to 50 % of a test population
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration
PBT	Persistent, Bioaccumulative and Toxic substance
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation
STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	Very Persistent and Very Bioaccumulative

**Hazard statements:**

H224: Extremely flammable liquid and vapour.

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H336: May cause drowsiness or dizziness.

H361: Suspected of damaging fertility or the unborn child.

H411: Toxic to aquatic life with long lasting effects.

**Precautionary statements:**

P201: Obtain special instructions before use.

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P273: Avoid release to the environment.

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

P331: Do NOT induce vomiting.

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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

Do not use Isomerizate for purposes other than indicated in the manufacturer's information. During such use the user may be exposed to unforeseen hazards.

Should you have any questions or doubts regarding the MSDS, its contents or other issues related to the material safety, please contact us at the address: [info@orlenlietuva.lt](mailto:info@orlenlietuva.lt)

NOTE. Information provided herein is considered to be accurate as of the date specified below. No warranty is made as to the accuracy or completeness of the data and information provided in this data sheet. Information provided herein serves only as guidelines for safe work, use, processing, storage, and waste management. It cannot be considered as a warranty or quality certificate. This information applies only to specific material designated and may not be suitable for such material used in combination with any other materials or in any other manner not described in this document.

Public Company *ORLEN Lietuva* shall not be responsible for any damage or injury resulting from abnormal use of the material and from any failure to adhere to recommendations.