[In accordance with the criteria of Regulation No 1907/2006 (REACH) as amended]

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

1.1 Product identifier

Aviation fuel Avgas 100LL
Aviation fuel Avgas 100VLL

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

Relevant identified uses: fuel for spark-ignition aviation engines.
Uses advised against: not determined.

1.3 Details of the supplier of the safety data sheet

Manufacturer: **WARTER FUELS Spółka Akcyjna**
Address: ul. Chemików 5, 09-411 Płock, Poland
Telephone number: +48 24/ 365 33 07/+48 24/ 365 22 83
with its registered office in Warsaw, address: ul. Koralowa 60, 02-967 Warszawa
E-mail address for a competent person responsible for sds: biuro@theta-doradztwo.pl

1.4 Emergency telephone number

112

Section 2: Hazards identification

2.1 Classification of the substance or mixture

Flam. Liq. 2 H225, **Repr. 2** H361d, **Asp. Tox. 1** H304, **STOT RE 2** H373, **Skin Irrit. 2** H315, **STOT SE 3** H336, **Aquatic Chronic 2** H411

Highly flammable liquid and vapour. Suspected of damaging the unborn child. May be fatal if swallowed and enters airways. May cause damage to organs through prolonged or repeated exposure through inhalation. Causes skin irritation. May cause drowsiness or dizziness. Toxic to aquatic life with long lasting effects.

2.2 Label elements

Hazard pictograms and signal words

DANGER

Substances which influenced classification:

naphtha (petroleum), light alkylate, naphtha (petroleum), isomerization, toluene

Hazard statements

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H361d	Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure through inhalation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist/vapours.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P308+P313	IF exposed or concerned: Get medical advice/attention.

2.3 Other hazards

Substances contain in the product do not meet criteria for PBT or vPvB in accordance with Annex XIII of Regulation REACH.

Section 3: Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

Naphtha (petroleum), light alkylate

Range of percentages:	> 30%
CAS number:	64741-66-8
EC number:	265-068-8
Index number:	649-276-00-X
Registration number:	01-2119463272-43-0004
Classification*:	Flam. Liq. 2 H225, Aquatic Chronic 2 H411, Asp. Tox. 1 H304, Skin Irrit. 2 H315, STOT SE. 3 H336

*taking into account the classification of P notes the product contains less than 0.1 w/w % of benzene.

Naphtha (petroleum), isomerization

Range of percentages:	< 30%
CAS number:	64741-70-4
EC number:	265-073-5
Index number:	649-277-00-5
Registration number:	01-2119480399-24-XXXX
Classification*:	Flam. Liq. 2 H225, Aquatic Chronic 2 H411, Asp. Tox. 1 H304, Skin Irrit. 2 H315, STOT SE. 3 H336

*taking into account the classification of P notes the product contains less than 0.1 w/w % of benzene and < 1% n-hexane.

Toluene

Range of percentages:	15-25%
CAS number:	108-88-3
EC number:	203-625-9
Index number:	601-021-00-3
Registration number:	01-2119471310-51-XXXX
Classification:	Flam. Liq. 2 H225, Repr. 2 H361d, Asp. Tox. 1 H304, STOT RE 2 H373, Skin Irrit. 2 H315, STOT SE 3 H336

Substance with a specific value at the Community level of the permissible concentration in the work environment.

Tetraethyllead

Range of percentages:	< 0,1%
CAS number:	78-00-2
EC number:	201-075-4
Index number:	082-002-00-1
Registration number:	01-2119622080-57-XXXX
Classification*:	Repr. 1A H360FD, Acute Tox. 2 H330, Acute Tox. 1 H310, Acute Tox. 2 H300, STOT RE 2 H373, Aquatic Acute 1 H400, Aquatic Chronic 1 H410

*taking into account the classification note of A.

1,2-dibromoethane

Range of percentages:	< 0,1%
CAS number:	106-93-4
EC number:	203-444-5
Index number:	602-010-00-6
Registration number:	01-2119539453-38-XXXX
Classification:	Carc. 1B H350, Acute Tox. 3 H331, Acute Tox. 3 H311, Acute Tox. 3 H301, Eye Irrit. 2 H319, STOT SE 3 H335, Skin Irrit. 2 H315, Aquatic Chronic 2 H411

Full text of each relevant H phrases is given in section 16 of sds.

Section 4: First aid measures

4.1 Description of first aid measures

Skin contact: remove contaminated clothing, immediately wash skin with plenty of water. If there was no irritation, it is advisable to use soap. If irritation occurs, consult a doctor.

Eye contact: consult a doctor if irritation occurs. Protect non- irritated eye, remove contact lenses. Contact with eyes, rinse thoroughly with water for 10-15 minutes. Avoid strong stream of water - the risk of cornea damage.

Ingestion: do not induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Call a doctor immediately and show container or label.

Inhalation: immediately consult a physician. Remove to fresh air, keep warm and at rest. Withdrawal symptoms may be delayed. Exposed person may need medical supervision for 24 hours.

4.2 Most import ant symptoms and effects, both acute and delayed

Symptoms may be delayed.

Eye contact: redness, tearing, mild irritation.

Skin contact: in the case of frequent or prolonged contact may cause redness, dryness, inflammation, irritation.

Ingestion: respiratory tract irritation, sore throat and respiratory tract, headache and dizziness. In serious cases, after 24 hours there is inflammation of the bronchi and lungs. In severe cases, pulmonary edema may occur, or loss of consciousness.

Ingestion: abdominal pain, nausea, vomiting, risk of pulmonary aspiration and chemical pneumonitis. In serious cases fainting may occur, hemolysis, disorders of internal organs.

4.3 Indication of any immediate medical attention and special treatment needed

Physician makes a decision regarding further medical treatment after thoroughly examination of the injured.

Section 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media: powder (CO_2) and foam extinguishers.

Powder extinguishers with ABC/BC putting powder. Ultimately water spray.

Unsuitable extinguishing media: water jet – risk of the propagation of the flame.

5.2 Special hazards arising from the substance or mixture

During the combustion, toxic gases may be generated, such as carbon monoxide, nitrogen oxides, organic vapors, etc. Avoid inhalation of combustion products that may pose a health risk.

5.3 Advice for firefighters

The security measures typical in case of fire. Do not stay in the danger zone without adequate fireresistant clothing and chemical-contained breathing apparatus with independent air circulation. Highly flammable. In the case of a fire or heating pressure increase will occur in the tank, which creates a risk of explosion. Product vapors are heavier than air and accumulate in the lower parts of the premises. There is a high likelihood of an explosive mixture with air - if such a danger occurs , order an immediate evacuation. Containers exposed to fire should be cooled from a safe distance with water spray jet. Do not allow extinguishing water entering drains, surface water and groundwater .

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

ATTENTION! Explosion threat. Fumes may float around the floor / ground towards remote ignitron sources. Restrict the access of outsiders to the area of accident pending the completion of cleaning operation. Ensure that any failure or its consequences is being carried out only by trained personnel. For large spills, isolate the danger area. Avoid direct contact with releasing product. Avoid breathing vapors. Use personal protective equipment. Avoid contact with eyes and skin. Provide adequate ventilation. Remove all sources of ignition, extinguish flames, announce a prohibition of smoking. Danger of slipping on spilled product.

6.2 Environmental precautions

In case of release of large amounts of the mixture, it is necessary to take appropriate steps to prevent it from spreading into the environment. Do not let the product to get through the surface or ground water and sewage system. Notify relevant emergency services.

6.3 Methods and material for containment and cleaning up

Damaged container place in an emergency container. Limit distribution of flood by embankment area; to pump out the collected liquid. Small amounts of the spilled liquid with a material absorber collect (sand, the earth, polymeric sorbents) and place in the closed container for a waste. Utilize in accordance with applicable regulations.

6.4 Reference to other sections

Appropriate conduct with waste product – see section 13.
Personal protective equipment – see section 8.

Section 7: Handling and storage

7.1 Precautions for safe handling

Work in accordance with the principles of safety and hygiene. Avoid contact with eyes and skin. Before the break and after work wash your hands. Unused containers should be sealed locked. Ensure adequate ventilation. Eliminate sources of ignition - do not use open flames, no smoking, no sparking tools and clothing fabrics are susceptible to electrostatic; protect the tanks from heat, install electrical equipment in explosion-proof technology.

7.2 Conditions for safe storage, including any incompabilities

Keep preparation in certified, properly labelled, tightly closed containers. Warehouse must be equipped with mechanical air-condition system, and anti-explosive lighting installation. Outdoor storage is allowed containers should be kept away from heat sources. Smoking, using open fire and sparks creating tools is banned. Keep on a hard impermeable surface, made of materials resistant to hydrocarbons. Tanks should be filled up to 90% of their volume. Keep away from oxidizing agents.

7.3 Specific end use(s)

Fuel for spark-ignition aviation engines.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Specification	TWA 8 hour	STEL 15 min
toluene [CAS 108-88-3]	192 mg/m^3	384 mg/m^3 (skin)

Legal Basis: Commission Directive 2006/15/EC of 7 February 2006 establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC.

Please check any national occupational exposure limit values in your country for substance contained in this product.

DNEL and PNEC

Toluene:

DNEL workers (dermal, long-term exposure - systemic): 384 mg/m3/dzień
DNEL workers (inhalation, long-term exposure - systemic): 192 mg/m3
DNEL workers (inhalation, long-term exposure - local): 192 mg/m3
DNEL workers (inhalation, acute exposure- systemic) 384 mg/m3
DNEL general population (dermal, long-term exposure - systemic): 226 mg/kg m.c.
DNEL general population (inhalation, long-term exposure - systemic): 56,5 mg/m3
DNEL general population (doustnie, long-term exposure - systemic): 8,13 mg/kg m.c.
DNEL general population (inhalation, acute exposure - local): 226 mg/m3.
PNEC aqua freshwater 0,68 mg/l
PNEC aqua marine water 0,68 mg/l
PNEC soil 2,89 mg/kg
PNEC sediment 16,39 mg/kg

PNEC sewage treatment plant 13,61 mg/kg

Benzyna; Benzyna po izomeryzacji (ropa naftowa):

DN(M)EL (inhalation, acute exposure) : 1300 mg/m3/ 15 min
DN(M)EL (inhalation, acute exposure- systemic) : 4320 mg/m3/ 1 h
DN(M)EL (inhalation, long-term exposure): 840 mg/m3/ 8 h
DN(M)EL (inhalation, long-term exposure): 10.000 mg/m3/6h/5 dni
PNEC aqua freshwater: *Tetrahymena pyriformis* LL50 (72 h) 15,41 mg/L

8.2 Exposure controls

Observe the general safety and hygiene. During operation, do not eat, drink or smoke. Avoid contact with skin and eyes. Avoid breathing vapors or aerosols. Ensure good ventilation at work stations local and general ventilation - to ensure the maintenance of concentrations of hazardous components in the atmosphere below the exposure limit values. In case of worker being drench, showers and eye safety washers should be installed near the working place.

Hand and body protection

Use gloves resistant to chemicals. Recommended glove material: nitrile rubber, PVA. In case of short-term exposure wear the protective gloves with protection level 2 or higher (breakthrough time > 30 min). In case of long-term exposure wear the protective gloves with protection level 6 (breakthrough time > 480 min). Wear protective clothing.

The material that the gloves are made of must be impenetrable and resistant to the product's effects. The selection of material must be performed with consideration of breakthrough time, penetration speed and degradation. Moreover, the selection of proper gloves depends not only on the material, but also on other quality features and changes depending on the manufacturer. The producer should provide detailed information regarding the exact breakthrough time. This information should be followed.

Eye/face protection

Wear goggles in a sealed enclosure, in case of emergency liquid splashing into the eye, exposure to mist or prolonged exposure to steam.

Respiratory protection

In normal conditions the application is not required. For concentrations exceeding limit values or insufficient ventilation, use approved respirator with appropriate filter or combined filter.

For work in confined spaces, insufficient oxygen in the air, a large uncontrolled emissions or other circumstances when the mask does not provide enough protection to use breathing apparatus with independent air supply.

Personal protective equipment must meet requirements of directive 89/686/CE. Employer is obliged to ensure equipment adequate to activities carried out, with quality demands, cleaning and maintenance.

Environmental exposure controls

Prevent direct runoff into drains / surface waters. Do not contaminate surface waters and drainage ditches, chemicals or used packaging. Any spill or uncontrolled spills into surface water should be reported to the appropriate authorities in accordance with national and local regulations. Export as chemical waste in accordance with national and local regulations.

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

physical state:	liquid
colour:	light blue, transparent
odour:	characteristic for organic solvents
odour threshold:	not determined
pH:	not determined
melting point/freezing point:	< - 60^{o}C
initial boiling point and boiling range:	37°C
flash point:	< 0°C
evaporation rate:	not determined
flammability (solid, gas):	not applicable
upper/lower flammability or explosive limits:	1,4% vol./ 11,5%vol.
vapour pressure (37,8^{o}C):	38-49 kPa
vapour density:	> 1 (air=1)
density (15^{o}C):	710 -730 kg/m^{3}
solubility(ies):	does not dissolve in water, dissolved in organic solvents
partition coefficient: n-octanol/water:	not determined
auto-ignition temperature:	not determined
decomposition temperature:	not determined
explosive properties:	vapours can form explosive mixtures with air
oxidising properties:	not display
dynamic viscosity:	< 20,5 mm^{2}/s

9.2 Other information

Not.

Section 10: Stability and reactivity

10.1 Reactivity

The product reacts with strong oxidizing agents. May form explosive mixtures with air. The product may soften some plastics.

10.2 Chemical stability

The product is stable under normal conditions.

10.3 Possibility of hazardous reactions

Dangerous reactions are not known.

10.4 Conditions to avoid

Avoid heat sources, heat, open flames, direct sunlight, electrostatic discharge.

10.5 Incompatible materials

Strong oxidizers.

10.6 Hazardous decomposition products

Unknown.

Section 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity of components

Toluene

LD_{50} (orally , rat)	636 mg.kg
LD_{50} (skin, rabbit)	12 124 mg/kg
LD_{50} (inhalation, rat)	4 000 ppm/4h

Naphtha

LD_{50} (orally, rat)	> 5000 mg/kg
LC_{50} (inhalation, rat)	> 5610 mg/l (4 h)
LD_{50} (skin, rabbit)	> 5000 mg/kg
NOAEL:	10080 mg/m³ air
NOAEC:	9840 mg/m³ air

Tetraethyllead

LC_{50} (inhalation, rat)	850 mg/m3 (1 h)
LD_{50} (orally, rat)	12300 µg/kg

1,2-dibromoethane:

LD_{50} (skin, rabbit)	300 mg/kg
LD_{50} (orally , rat)	108 mg/kg

Toxicity of product

Acute toxicity

ATEmix (oral):	5 000 mg/kg
ATEmix (skin):	5 000 mg/kg
ATEmix (inhalation, vapour):	> 5 mg/l

Based on available data, the classification criteria are not met.

Skin corrosion/ irritation

Causes skin irritation. May cause drowsiness or dizziness.

Serious eye damage/ irritation

Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Suspected of damaging the unborn child.

STOT- single exposure

Based on available data, the classification criteria are not met.

STOT- repeated exposure

May cause damage to organs through prolonged or repeated exposure through inhalation.

Aspiration hazard

May be fatal if swallowed and enters airways.

Health effects of acute exposure

Eyes Mucous membrane irritation , tearing hyperaemia, irritation of the respiratory tract, headache, dizziness, nausea, vomiting, with higher concentrations of vapor coordination abnormal, confusion, unconsciousness. Acute, severe and even fatal aviation gasolinepoisoning occur during cleaning of tanks, storage tanks, during pouring. Sometimes dangerous aviation gasoline soaked clothing, which easily penetrates into the body through the skin. Aviation gasoline damage internal organs, including bone and liver. Sensitize the myocardium. Leads to respiratory paralysis.

Health effects of chronic exposure

The symptoms of chronic exposure: upper respiratory inflammation and skin (dryness, redness, cracking). Decreased appetite are observed, general weakness and conjunctivitis, symptoms of central nervous system.

Section 12: Ecological information

12.1 Toxicity

Toxicity of components

Gasoline (in general)

Toxicity to fish LC_{50}	100 mg Pb/l (*Salmo gairdneri irideus)*

Concentration leads to a distortion of anaerobic fermentation of sewage sludge: >400 mg/l

Toluene

Toxicity to aquatic organisms LC_{50}	70-420 mg/l
Toxicity to daphnia EC_{50}	270 mg/l (*Daphnia magna)*
Toxicity to algae EC_{50}	125-160 mg/l (S*cenedesmus)*

Tetraethyllead

Toxicity to fish LC_{50}	480 mg Pb/l (Leuciscus idus melanotus)
Toxicity to plankton EC_{50}	95 mg Pb/l
Toxicity to microorganisms EC_{50}	0,1 mg Pb/l

Toxicity of product

Dangerous for the environment. Toxic to aquatic life with long lasting effects.

12.2 Persistence and degradability

Ingredients are poorly degradable.

12.3 Bioaccumulative potential

Potential to bio-accumulate. The product can accumulate in organisms.

12.4 Mobility in soil

Insoluble in water, it floats on the surface. Product is mobile in soil. Mobility of components of the mixture in soil depends on the hydrophilic and hydrophobic properties and biotic and abiotic conditions of soil, including its structure, climatic conditions, seasons and soil organisms (mostly: bacteria, fungus, algae, invertebrates).

12.5 Results of PBT and vPvB assessment

Not applicable.

12.6 Other adverse effects

Acceptable ambient air pollution: 0,5µg/m^3 per Pb. The mixture is not classified as hazardous to the ozone layer. Consider other harmful effects of individual components of the mixture on the environment (e.g., endocrine disrupting potential, global warming potential).

Section 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods for the product: dispose in accordance with applicable regulations. Do not empty into drains. Residues stored in sealed, steel containers. Wastes classify as hazardous waste.

Disposal methods for used packing: recycling or neutralizing should be done according to obligatory regulations for waste. Only completely emptied packaging can be recycled. Do not mix with other waste.
Legal basis: Directive 2008/98/EC, 94/62/EC.

Section 14: Transport information

14.1 UN numer (ONZ Number)

UN 1203

14.2 UN proper shipping name

ADR/RID
MOTOR SPIRIT
IMDG
MOTOR SPIRIT
ICAO/IATA
MOTOR SPIRIT

14.3 Transport hazard class(es)

3

14.4 Packing group

II

14.5 Environmental hazards

According to ADR, RID, IMDG product is a threat to the environment.

14.6 Special precautions for user

Wear suitable protective clothing, gloves and eye / face protection in accordance with section 8. Avoid ignition sources.

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

Not applicable.

Section 15: Regulatory information

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

Commission Regulation (EU) **2015/830** of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (Text with EEA relevance) as amended.
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives.
European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste

15.2 Chemical safety assessment

Chemical safety assessment was carried out for the substance.

Section 16: Other information

Full text of indicated R and H phrases mentioned in section 3

H225	Highly flammable liquid and vapour.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
H304	May be fatal if swallowed and enters airways.
H310	Fatal in contact with skin.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H360	May damage fertility or the unborn child.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.

Clarification of aberrations and acronyms

PBT	Persistent, Bioaccumulative and Toxic substance
vPvB	very Persistent, very Bioaccumulative substance
TWA	Time Weighted Average
STEL	Short-term exposure limit
Acute Tox. 1	Acute toxicity cat. 1
Acute Tox. 2	Acute toxicity cat. 2
Asp. Tox. 1	Aspiration hazard cat. 1
Aquatic Acute 1	Hazardous to the aquatic environment cat. 1
Aquatic Chronic 1	Hazardous to the aquatic environment cat. 1
Aquatic Chronic 2	Hazardous to the aquatic environment cat. 2
Carc. 1B	Carcinogenicity cat. 1B
Eye Irrit. 2	Eye irritation cat. 2
Flam. Liq. 2	Flammable liquid cat. 2
Repr. 1A	Reproductive toxicity cat. 1A
Repr. 2	Reproductive toxicity cat. 2
Skin Irrit. 2	Skin irritation cat. 2
STOT RE 2	Specific target organ toxicity — repeated exposure cat. 2
STOT RE 3	Specific target organ toxicity — repeated exposure cat. 3

Trainings

Before commencing working with the product, the user should learn the Health & Safety regulations, regarding handling chemicals, and in particular, undergo a proper workplace training. Drivers should be trained and obtain proper certification in accordance with the requirements of ADR.

Other data

Classification was based on data on hazardous substances calculation method under the guidance of Regulation 1272/2008/EC (CLP).

Modifications:	section:1-16
Composed by:	mgr Anna Michalska-Maciejczyk (on the basis of producer's data).
Safety Data Sheet made by:	**„THETA"** Doradztwo Techniczne

This SDS annuls and replaces all previous version SDS

The information above is based on a current available data concerning the product, but also on the experience and knowledge in this field of the producer. They are neither a quality description of the product nor a guarantee of particular features. They are to be treated as aid to safety in transport, storage and usage of the product. That does not free the user from the responsibility of improper usage of the information above and also of improper compliance with the law norms in the field.