Wratislavia-Biodiesel S.A.

SAFETY DATA SHEET
compliant with Regulation (EC) No. 1907/2006 (REACH) and Commission Regulation (EU) No. 453/2010

Worked out on: 01/03/2012 Updated on: 01/01/2015 (Version II)

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

1.1. Product identifier:

TECHNICAL GRADE GLYCERINE

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

Glycerine is used (inter alia) in the food, pharmaceutical, cosmetic, crop protection and chemical industries, both as an ingredient of mixtures and as a raw material for further syntheses.

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

WRATISLAVIA-BIODIESEL S.A.
ul. Monopolowa 4
51-501 Wrocław
Phone no. 48 (71) 34 74 104
Fax. no. 48 (71) 34 74 118

1.4. Emergency telephone number: +48/ 71 347 42 44 (Monday to Friday from 8 a.m. to 4 p.m.)

Contact person responsible for preparation of the sheet: Tomasz Prejbisz, e-mail: t.prejbisz@wrtislavia-bio.pl

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture:

The product was not classified as hazardous within the meaning of applicable legal provisions.

2.2. Label elements:

No special labels are used for the substance (the substance is not classified as hazardous).

2.3. Other hazards:

Inhaling vapours and use in large quantities may cause nausea, sleepiness, vomiting and diarrhoea (see Sections 8 and 11 of the Safety Data Sheet).

SECTION 3: Composition/information on ingredients

3.1. Substances:

Substance:	CAS no.	EC no.	weight fractions % :
Glycerol (1,2,3- Propantriol)	56-81-5	200-289-5	83-90
Sodium chloride	7647-14-5	231-679-3	4-10
Methanol (methyl alcohol)	67-56-1	200-659-6	<0,5

SECTION 4: First aid measures

4.1. Description of first-aid measures

4.1.1.Inhalation: In case of longer contact through respiratory tract provide access of fresh air. If the victim feels bad, consult a doctor.

4.1.2.Skin contact: May cause skin irritation. It is recommended to take off contaminated clothes and rinse the skin with water. If symptoms persist, consult a doctor.

4.1.3.Eye contact: May cause slight eye irritation. It is recommended to rinse eyes with a large quantity of lukewarm, preferably running water. Remove contact lenses. Avoid a strong stream of water because of a risk of mechanical damage of the cornea. In case of irritation, contact an eye-doctor.

4.1.4.Swallowing: If swallowed, do not cause vomiting. It is recommended to rinse the mouth. In case of occurrence of any symptoms, contact a doctor.

4.2. Most important symptoms and effects, both acute and delayed:

Longer stay in the atmosphere of glycerine vapours or use of larger quantities of glycerine may cause nausea, vomiting or diarrhoea. In case of occurrence of symptoms, contact a doctor.

4.3. Indication of any immediate medical attention and special treatment needed:

No special recommendations

SECTION 5: Fire-fighting measures

Flammable substance. Flash point of pure product is ca. 180 °C. Auto-ignition occurs in the temperature above 370 °C. Containers not covered by fire must be, if possible, transported into a safe place. Containers imposed to the activity of fire must be cooled with a spray jet.

5.1. Extinguishing media:

Relevant extinguishing media: water, carbon-dioxide and dry powder extinguishers, fire fighting foams. Irrelevant extinguishing media: all extinguishing media are permitted.

5.2. Special hazards arising from the substance or mixture:

In the combustion process poisonous acrolein and carbon monoxide (product of incomplete combustion) may be produced. Use thermal protective clothes and gas-tight suits or protective equipment of the respiratory system. Hot glycerine closely sticks to the skin, thus causing severe burns.

5.3. Advice for firefighters:

See points 5.1 and 5.2 of the Safety Data Sheet.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

6.1.1. For persons other than the staff administering aid:

In case of leak or unintended release eliminate potential sources of ignition and protect the place against access of unauthorised persons. It is recommended to use basic personal protective equipment, such as protective gloves (e.g. rubber gloves) and glasses.

6.1.2. For persons administering aid:

Persons directly participating in the neutralisation of the leak should possess protective clothes in the form of leakproof gloves and glasses. In case of contact with hot substance, use thermal protective clothes and protective equipment for the respiratory tract. Collect the leaked liquid with the use of available equipment (the product is not aggressive or caustic) or with the use of sorbent materials (mats, sawdust, etc.)

6.2. Environmental precautions

In case of leak, remove the sources of ignition and, if possible, eradicate the leak. Protect the surroundings against the product getting to watercourses.

6.3. Methods and material for containment and cleaning up:

Absorb the substance into an inert adhesive material (sand, diatomaceous earth, absorbent), carry to tightly-closed containers and proceed to disposal. Rinse contaminated area with water.
In case of large leaks, consider making a barrier in order to minimise the leak surface.

6.4. Reference to other sections:

None.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

Use in well-ventilated rooms. Keep far from sources of high temperature and sources of ignition. It is recommended to use protective gloves and glasses, so as to avoid contact with the skin and eyes during work with the substance. Do not inhale vapours/aerosols. Do not consume, do not drink and do not smoke during work with the substance. After the end of work take off protective clothes and wash the hands.

7.2. Conditions for safe storage, including any incompatibilities:

Store in a ventilated warehouse in tightly-closed packages or containers (possesses hygroscopic properties). Store far from sources of heat in the temperature above the freezing point (recommended temperature from 25 to 40°C). In case of sodification, heat the product to the recommended temperature of storage. Protect against the activity of light, contact with water or moisture. Do not store with substances that may get involved in a chemical reaction, such as strong oxidisers, phosphorus pentoxides, nitric acid and sulfuric acid.

7.3. Specific end use(s):

None indicated.

SECTION 8: Exposure control / personal protection

8.1. Control parameters:

The highest permissible concentration in the work environment was established for the substance.

Ingredient	CAS-no.	Standard	Value	Unit
Glycerol (aerosols)	***56-81-5***	***NDS***	***10***	***mg/m^3***
Methanol	***67-56-1***	***NDS/NDSCH***	***100/400***	***mg/m^3***

8.2. Exposure controls:

8.2.1. Technical means of control applied:

Due to the NDS determined for the substance, it is recommended to carry out tests with regard to the content of glycerol vapours in the work environment.

8.2.2. Personal means of protection:

Respiratory tract: In case of exceeding permissible concentrations of vapours of the substance or in case of insufficient ventilation, use protective equipment for the respiratory tract with properly selected filter.

Hands and skin: Use protective clothes made of natural fabrics or synthetic fibres, protective gloves, e.g. made of nitrile rubber. In case of contact with hot substance, use thermal protective clothes.

Eyes: Use protective equipment for the eyes, e.g. glasses, helmets.

OHS: General provisions on industrial health and safety are applicable. Do not allow for exceeding permissible standard concentrations of hazardous ingredients in the work environment. Do not consume, do not drink and do not smoke during work.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties:

- **Appearance:** thick liquid, colour from green to brown.
- **Odour:** charactersitic.
- **pH:** within the range of 5-10.
- **Melting point:** 18 °C.
- **Initial boiling point:** 290 °C (1013 hPa).
- **Flash point:** ca. 180 °C (1013 hPa).
- **Sulubility in water and other solvents:** The substance dissolves in water very well. It mixes well with such organic liquids as ethanol, methanol and phenol. It poorly mixes with acetone, hardly mixes with oils.
- **Density:** ok 1,3 g/cm3 at 20°C.
- **Explosion limits:** No data available.
- **Auto-ignition temperature:** >370°C.
- **Viscocity in the temperature of 20°C:** 1410 mPas.
- **N-octanol-water partition co-efficient:** (log Pow): - 2.66.

9.2 Other properties:

The substance possesses hygroscopic properties, in high temperature (fire) it may be subject to thermal decomposition and emit poisonous acrolein.

SECTION 10: Stability and reactivity

10.1. Reactivity:

The substance may react with strong oxidisers, phosphorus pentoxide, nitric acid, sulfuric acid and their derivatives.

10.2. Chemical stability:

The substance is chemically stable in normal conditions of storage (temperature 25-40 °C). Access of water or moisture may cause deterioration of the quality of the product due to hygroscopic properties of glycerine.

10.3. Possibility of hazardous reactions

The substance is stable in normal conditions of use and storage. Decomposition of the substance and side reactions occur above the temperature of 290℃. Decomposition of the substance may cause emission of harmful acrolein.
The substance may react with strong oxidisers, phosphorus pentoxide, nitric acid, sulfuric acid and their derivatives.

10.4. Conditions to avoid

Avoid heating the product to a high temperature, protect the product from sources of ignition.

10.5. Incompatible materials

Avoid contact of the product with compounds listed in pt. 10.3

10.6. Hazardous decomposition products

During thermal decomposition poisonous acrolein may be emitted. During
incomplete combustion carbon monoxide may be emitted.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

The substance is not toxic for people. Use of the product in large quantities may cause stomachache, nausea, sleepiness and diarrhoea.

Severe toxicity:

Ingredient	CAS-No	Dosage	Value	Unit
Glycerole	**56-81-6**	**LD_{50} - orally rat**	**12600**	**mg/kg1**
		LD_{50}- topically rabbit	**18700**	**mg/kg**

Caustic/irritating activity on the skin: none or slightly irritating**.**

Severe damage to eyes/irritating activity on the eyes: slightly irritating.

Allergising activity on the respiratory tract or the skin: No allergising activity was found**.**

Mutagenic activity on reproductive cells: No cases of mutagenic activity are known.

Carcinogenicity: No carcinogenicity activity was found.

Harmful activity on reproduction: No reprotoxic activity is known.

Toxic activity on target organs-one-time exposure: No toxic activity on the human system was found.

Toxic activity on target organs: repeated exposure: No toxic activity on the human system was found.

Hazard caused by aspiration: Inhaling vapours/aerosols may be harmful to health (see pt. 8 of the Safety Data Sheet).

SECTION 12: Ecological information

Ingredient	CAS-no.	Dosage	Value	Unit
Glycerol	56-81-5	LC50 fish(Leuciscus idus)	>10000	mg/l
		LU50fish(Carassius auratus)	>5000	mg/l/24h
		UE50 invertebrate (Daphnia magna)	>10000	mg/l/24h
Toxic concentration limits:		IC5 algae	>10000	mg/l/7days
		UE5 bacteria	>10000	mg/l/16h
		UE5 protozoa	3200	mg/l/72h

When used properly, the substance is not hazardous to the environment.

12.2. Persistence and degradability

Prevent the substance from getting into the sewage system, the soil, watercourses and water tanks.

The product is easily biodegradable, (log Pow = -2.66).

CHZT - 1160 mgO_2/g,

BZT5 - 700 mgO2/g,

12.3. Bioaccumulative potential

The product does not reveal bioaccumulative potential in the environment.

12.4. Mobility in soil:

No data available on product mobility in the soil.

12.5. Results of PBT and vPvB assessment

N/A

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods:

Do not remove the substance with municipal waste.

Do not remove to the sewage system.

Do not contaminate ground or surface waters.

Give excesses of the product to companies specialising in waste collection.

Waste code proposed by the manufacturer: 07 01 99 - Other waste not listed.

SECTION 14: Transport information

14.1. UN Number:

The substance is not a subject of transport provisions.

14.2. UN proper shipping name:

See pt. 1.1 of the Safety Data Sheet.

14.3. Transport hazard class(es):

N/A

14.4. Packing group:

N/A

14.5. Environmental hazards:

The substance is not classified as hazardous to the environment pursuant to applicable legal provisions.

14.6. Special precautions for user:

The product does not require use of any special precautions apart from basic OHS provisions and recommendations of Sections 6, 7, 8 and 10.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:

N/A

SECTION 15: Regulatory information

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

- The Chemical Substance and Preparation Act of 11 January 2001 (Journal of Laws Dz. U. of 14 February 2001, as amended).
- COMMISSION REGULATION (EC) No 790/2009of 10 August 2009amending, for the purposes of its adaptation to technical and scientific progress, Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (Official Journal of the European Union series L No. 235 of 5 September 2009).
- The Minister of Health Regulation on criteria and manners of classification of chemical substances and preparations of 2 September 2003 (Journal of Laws Dz. U. No. 171 item 1666, 2003 as amended).
- The Minister of Economy Regulation on basic requirements for personal protective equipment of 21 December 2005 (Journal of Laws Dz. U. No. 259, 2173, 2005).
- Road Carriage of Hazardous Goods Act of 28 October 2002 (Journal of Laws Dz. U. No. 199, item 1671, 2002).
- The Government's Statement on coming into effect of amendments to Annexes A and B to the European Agreement regarding international carriage of hazardous goods by road (ADR) prepared in Geneva as of 30 September 1957 of 26 July 2005 (Journal of Laws Dz. U. No. 178, item 1481, 2005 as amended).
- The Minister of Health Regulation on marking of hazardous substances and preparations and some chemical preparations of 5 March 2009 (Journal of Laws Dz. U. No. 53 item 439, 2009).
- 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), 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 (published in the Official Journal of the European Union series L No. 396 of 30 December 2006, as amended).
- COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- The Waste Act of 27 April 2001 (Journal of Laws Dz. U. No. 62, item 628, 2001, as amended).
- The Package and Package Waste Act of 11 May 2001 (Journal of Laws Dz. U. No. 63, item 638, 2001).
- The Minister of Environment Regulation on the catalogue of waste of 27 September 2001 (Journal of Laws Dz. U. No. 112, item 1206, 2001).
- The Act on Amendment to the Waste Act and Some Other Acts of 29 July 2005 (Journal of Laws Dz. U. No. 175, item 1458, 2005).

  The Minister of Labour and Social Policy Regulation on the highest permissible concentrations and intensities of factors harmful to health in the work environment of 29 November 2002 (Journal of Laws Dz. U. No. 217, item 1833, 2002 as amended).

15.2. Chemical safety assessment

No chemical safety assessment was required or performed.

SECTION 16: Other Information

This version of the Safety Data Sheet was prepared in compliance with the requirements of Commission Regulation (EU) No 453/2010of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

The information contained in the Safety Data Sheet is aimed to describe the substance only from the perspective of safety requirements. The user is responsible for creating conditions of safe use of the substance and for any effects resulting from improper use of the substance.

List of R-phrases:

R11 - Highly flammable

R23/24/25 - Toxic by inhalation, in contact with skin, if swallowed, R 39/23/24/25 - Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed

Other sources of information used in the Safety Data Sheet:

IUCLID Data Bank (European Commission - European Chemicals Bureau).

The Safety Data Sheet was prepared by WRATISLAVIA-BIODIESEL S.A. with its registered office in Wrocław.