

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

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

- 1.1 Product identifier:
Lighter gas liquefied
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:
Identified use: Lighter gas
Uses advised against: not determined
- 1.3 Details of the supplier of the safety data sheet:
Supplier: TIROSS POLSKA SP. Z O.O.
Address: AL. KRAKOWSKA 118, 05-090 SĘKOCIN, POLAND
Phone/Fax: +48 22 7596075
- e-mail address of competent person responsible for the SDS: office@tiross.pl
- 1.4 Emergency phone number:
112 (24/7 emergency phone number)

Section 2: Hazards identification

- 2.1 Classification of the substance or mixture
This mixture is classified by method of calculation taking into account the physic-chemical properties and the actual concentrations.
Product does not contain substance(s) classified as sensitizing according to EC 1272/2008.

Flam. Aerosol 1 H222
Press. Gas H280

- 2.2 Label elements:



GHS02

Signal word: DANGER
Identifier: Not applicable

Hazard statements:
H222 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.

Supplemental label elements:

Not applicable

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P211 Do not spray on an open flame or other ignition source.
P251 Do not pierce or burn, even after use.
P410 + P403 Protect from sunlight. Store in a well-ventilated place.
P410 + P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Supplementary information about the risks (EU): None

- 2.3 Other hazards:
No detailed information if product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
Forms explosive mixtures with air. In gas phase is heavier than air, can persist in landfills. Sensitive to electrostatic discharges.

Section 3: Composition/information on ingredients

- 3.1 Substance:
Not applicable.
- 3.2 Mixture:

petroleum gases, liquefied				
REACH No.	Insufficient data			
Index No.	649-202-00-6			
EC No.	270-704-2			
CAS No.	68476-85-7			
Concentration %	>99			
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Press. Gas	H280	GHS04	Wng
	Flam. Gas 1	H220	GHS02	Dgr

Note K – contains less than 0,1 % weight 1,3-butadiene (EINECS No. 203-450-8).

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

Unclassified ingredients: no access to data

Ingredients according to EC 648/2004:
hydrocarbons, aliphatic $\geq 30\%$

See Section 16 for the full text of the H-phrases declared above.

Section 4: First aid measures

4.1 Description of first aid measures

General:

In case of any symptoms occur, call the doctor immediately or take the victim to the hospital, show the packaging or label. In case of breathing difficulties, if possible, give oxygen or use artificial respiration. In case of cardiac arrest (no heartbeat) take CPR. If unconscious place in the recovery position. Do not leave victim unattended.

Inhalation:

Remove victim to fresh air. Keep calm and warm.

Skin contact:

Contact with liquid product may cause frostbite. Do not remove clothing adhered to spots frostbitten. If there are symptoms of frostbite (blanching or redness, burning or tingling sensation), do not rub, massage or oppress the frostbitten area. Immediately refer patient to the hospital. Wash skin with plenty of running water.

Eye contact:

In case of contact, immediately flush eyes with plenty of water for at least several minutes. Do not use hot water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention if irritation develops.

Ingestion:

It is not considered the most likely route of exposure - frostbite of the lips and mouth may occur in contact with the product in liquid form.

Protection of first-aiders:

No action shall be taken involving any personal risk or without suitable training. Always use personal protective equipment.

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

Eye contact: Prolonged exposure may cause eye irritation.

Inhalation: Fatigue, headache, dizziness, disorientation, shortness of breath, rapid breathing and heartbeat, loss of consciousness, seizures, cardiac arrest.

Skin contact: Skin redness and frostbites.

Ingestion: Not applicable to aerosol products.

4.1 Indication of any immediate medical attention and special treatment needed:

Seek medical advice immediately in case of accident or if you feel unwell. Do not induce vomiting or administer anything orally to an unconscious person.

Give medical staff SDS or label/packaging. Anyone providing assistance in the area of an unknown concentration of vapours / mist should be equipped with adequate respiratory protection. Note to physician: Symptomatic and supportive treatment. Antidote: oxygen.

Section 5: Firefighting measures

5.1 Extinguishing media:

Suitable extinguishing media:

CO₂, extinguishing powder, alcohol-resistant foam, water spray or water fog.

Unsuitable extinguishing media:

Water jet. Must prevent the simultaneous application of foam and water on the same surface as the water destroys the foam.

5.2 Special hazards arising from the substance or mixture:

Mixture is highly flammable and sensitive to electrostatic discharges. Vapours are heavier than air and spread out over the surface of the ground, accumulate in the lower parts of rooms and depressions. Forms explosive mixtures with air. Closed containers exposed to fire or high temperatures may explode due to an increase of pressure inside. Do not breathe combustion or explosion products of the mixture.

5.3 Advice for firefighters:

Follow the procedures for fighting fires of chemicals. In case of fire involving large quantities of product, evacuate all bystanders from the danger zone. Sealed containers exposed to fire or high temperature cool down, from a safe distance, with dispersed streams of water. Remove them from the danger zone, if possible and safe to do so. Do not allow fire-fighting sewage to enter into drains or waterways. Created waste and residues after fire disposed of in accordance with local regulations. Persons involved in firefighting should be trained, equipped with breathing apparatus with independent air supply and full protective clothing.

Section 6: Accidental release measures:

6.1 Personal precautions, protective equipment and emergency procedures:

Do not breathe vapours. Inform about failure. Call the National Fire Service, rescue teams and the Police. Remove all people not involved in the liquidation of consequences of the event from the danger zone. If necessary, order the evacuation. Only persons trained, equipped with proper protective wear and equipment can participate in the rescue operation. Avoid contact with eyes, skin and clothing. Spills can generate large amounts of flammable gas which is heavier than air and may accumulate in low or confined areas. Use a special detector to detect flammable gas or vapor. If it is safe, eliminate all sources of ignition (i.e. electricity, sparks, fire, torches).

6.2 Environmental precautions:

Eliminate or reduce the release of the product (reduce the liquid flow, seal, damaged container put in emergency container), if possible and safe to do so. Do not let the product enter drains, water and soil. Reduce the spread of the spill by building area embankments. Ensure adequate ventilation, especially in confined areas. Inform appropriate health and safety services, rescue teams, environment administration and authorities.

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

6.3 Methods and materials for containment and cleaning up:

Spillage is likely to lead to rapid and complete evaporation of the product. Isolate the spill area and avoid the fire/explosion hazard, taking into account the wind direction and speed until fully evaporated. If the spill pollutes a river or lake, notify the authorities.

6.4 Reference to other sections:

See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information. See Section 7 for precautions.

Section 7: Handling and storage:

7.1 Precautions for safe handling:

Pressurized container. Do not pierce even after use. Do not use near fire or other sources of ignition. Use with adequate ventilation. Avoid skin and eyes frostbites. Unused containers store tightly closed. Follow basic hygiene rules: do not eat, drink, or smoke during work. At the completion / discontinue of work wash your hands with water. Use personal protective equipment as listed in section 8 of SDS.

CAUTION: Risk of formation of explosive vapour-air mixtures.

7.2 Conditions for safe storage, including any incompatibilities:

- Refer to supplier's container handling instructions.
- Pay attention to the warnings on the label.
- Store only in certified, original, properly labelled, sealed containers.
- Keep away from any heat sources, open flames, sparks and other sources of ignition. Do not use tools that produce sparks.
- Keep out of direct sunlight.
- Do not smoke, don't use matches or lighters.
- Forbid access to unauthorized persons.
- Containers which are opened must be carefully resealed and keep upright to prevent leakage.
- Store on solid ground.
- Store in a dry, cool, well-ventilated area.
- Keep away from oxidising agents, strong bases and acids.
- Do not empty into drains, surface water or groundwater (this includes disposal of empty containers).
- Recommended storage temperature below 40°C.

7.3 Specific end use(s):

None.

Section 8: Exposure controls/personal protection:

8.1 Control parameters:

Legal basis:

Regulation of the Minister of Labour and Social Policy of 6 June 2014 on maximum permissible concentration and intensity of agents harmful to health in the work environment (Dz.U. (Journal of Laws) 2014.817).

CAS	Chemical factor	Limits			
		(NDS)		(NDSCh)	
		mg/m ³	ppm	mg/m ³	ppm
74-98-6	propane	1800		-	
106-97-8	butane	1900		3000	

DNEL

In accordance with par. 2 of Annex XI of REACH, the test need not to be performed for flammable gases at room temperature.

PNEC

No specific data.

8.2 Exposure controls:

Respiratory tract:

Provide adequate ventilation, do not inhale the spray. In case of insufficient ventilation, wear gas mask with filter A2 P2 (EN 14387) type, absorber colour brown or blue or self-contained breathing apparatus.

Skin and body:

Protective clothing consisting of neck buttoned jackets and cuffs, lined pants. Oil-resistant safety shoes, anti-slip. Within the hazardous area both outer clothing and shoes should be able to discharge static electricity. In order to protect exposed skin it is recommended to use moisturising creams, but they should not be used immediately after exposure.

Hands:

Wear protective gloves impermeable and resistant to the product (e.g., Neoprene, nitrile tested to EN374). It is recommended to change gloves regularly and replace them immediately if you notice any signs of wear or damage (tearing, puncture) or changes in appearance (colour, elasticity, shape). CAUTION: gloves made of polyvinyl acetate are not waterproof, so are not suitable for use in an emergency.

Eyes and face:

In case of prolonged exposure or splashes of liquid hazard, wear safety sealed goggles according to EN 166. It is recommended to equip the workplace in a water shower for rinsing eyes.

Thermal hazard:

Overheated container deforms, may burst and move a considerable distance.

Environmental exposure control:

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

Store and use the container in a well-ventilated place. Additional local ventilation may be needed for some processes. The employer is obliged to read and apply in practice the provisions of the Acts on environmental protection, water law and the principles of collective water supply and sewage disposal and apply legal provisions contained in appropriate Regulations relating to these Acts. Legal provisions relating to waste disposal are specified in Section 15.

Section 9: Physical and chemical properties:

Parameter	Value
Appearance	Liquid
Colour	Colourless
Odour	Characteristic, in case of odorizing - unpleasant
Odour threshold	Noticeable in the air with the content corresponding to 20% of the lower explosive limit
Density (g/cm ³ , 15 °C)	0,50-0,56
pH	Not applicable
Melting point/ freezing point (°C)	-187,6 to -138,3
Boiling point (°C)	-42 to -1
Flash point (°C)	-95 to -60
Auto-ignition temperature (°C)	> 287
Evaporation rate	No specific data
Explosive limits: (lower/upper % v/v)	9,6 / 1,9
Combustibility	Extremely flammable
Vapour pressure (MPa) (-15 °C) (20 °C) (70 °C)	> 0,10 = 0,83 < 2,55
Vapour density	1,55 to 2,08 (air=1)
Solubility in fats	Soluble in most organic solvents
Solubility in water	Insoluble
Partition coefficient n-octanol/ water	The substance is a UVCB substance. Standard methods for water-solubility are dedicated to single component substances
Decomposition temperature (°C)	No specific data
Viscosity	Not applicable
Explosive properties	Vapour/air mixture acquire explosive properties
Oxidizing properties	Not applicable
VOC (g/l)	Not applicable
Expansion of liquid state	about 1% when temperature increase 6°C

9.1 Other information:

No specific data.

Section 10: Stability and reactivity:

10.1 Reactivity:

For this product or its ingredients there is no specific test data related to reactivity.

10.2 Chemical stability:

The mixture is stable under normal ambient conditions, as well as under expected temperature and pressure during storage and handling.

10.3 Possibility of hazardous reactions:

The product creates no hazardous chemical reactions in normal conditions of use. Decomposition can occur under high temperature. Forms an explosive mixture with air.

10.4 Conditions to avoid:

Accumulated static electricity. Sources of heat and hot surfaces. Store at temperatures below 50 ° C.

10.5 Incompatible materials:

Avoid contact with strong oxidizing agents, chlorine, hydrogen chloride or hydrogen fluoride and combustible materials.

10.6 Hazardous decomposition products:

Carbon oxide, carbon dioxide.

Section 11: Toxicological information:

There are no data available on the product itself. This product has been evaluated following the conventional method specified by the EU Directive and is appropriately classified in terms of toxicity. Details are given in Sections 2 and 3.

11.1 Information on toxicological effects:

Acute toxicity:

Not applicable. According to par. 2 of Annex XI of REACH the test need not to be carried out for flammable gases at room temperature (test is technically impossible).

Skin corrosion/ irritation:

No specific data.

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

Serious eye damage/ irritation:
No specific data.
Respiratory or skin sensitisation:
No specific data.
Germ cell mutagenicity:
No specific data.
Carcinogenicity:
No specific data.
Reproductive toxicity:
No specific data.
Specific target organ toxicity - Single exposure:
No specific data.
Specific target organ toxicity- Repeated exposure
No specific data.
Aspiration hazard:
No specific data.

Section 12: Ecological information:

For more information on possible environmental effects, see Section 2.1. (classification). No data for the final product, the evaluation was made based on the individual components.

12.1 Toxicity:

Petroleum gases, liquefied
LC50: 24,11 mg/l 96h Oncorhynchus mykiss
EC50: 14,22 mg/l 48h Daphnia magna
EC50: 7,71 mg/l 72h Pseudokirchnerella subcapitata

12.2 Persistence and biodegradability:

Degradation in water: $K_{sw} = 0,047$ d-1
Degradation in sediment: $K_{sed} = 0,0023$ d-1
Degradation in soil: $K_{soil} = 0,023$ d-1

12.3 Bioaccumulative potential:

K_{ow} : No specific data.
BCF: No specific data.

12.4 Mobility in soil:

After release evaporates quickly without causing contamination of soil and water. Spills are unlikely to be able to penetrate soil.

12.5 Results of PBT and vPvB assessment:

Product does not meet the eligibility criteria for PBT or vPvB according to Annex XIII.

12.6 Other adverse effects:

No specific data.

Section 13: Disposal considerations:

13.1 Waste treatment methods

Recommendations regarding mixture:

CAUTION: The product residues in empty containers may create risk of explosion and fire. Do not weld, heat, cut or drill product tanks or containers both containing the product and emptied.

Waste code 16 05 04 - Gases in pressure containers and discarded chemicals. Gases in pressure containers (including halon) containing dangerous substances.

CAUTION: Since waste code is assigned depending on the source of their origin, the end user should, taking into account the specific conditions of use of the product, define the resulting waste and assign the appropriate code, in accordance with applicable regulations.

Remove any residue of the product, because even a small amount of the mixture in the container may explode at temperatures above 50°C. Do not empty into drains. Prevent pollution of surface and ground water. Waste product should be recovered or utilized in authorized incineration plants or waste treatment / disposal facility in accordance with applicable regulations. Recovery / recycling / liquidation of packaging waste must be carried out according to the applicable regulations. Cooperate with companies with the appropriate permissions.

CAUTION: Only completely emptied and cleaned packaging may be recycled!

Council Directive 91/689/EC on hazardous waste, amended by Council Directive 94/31/EEC and extended by Council Decision 94/904 establishing a list of hazardous waste.

Act of 14 December 2012 on waste (Dz.U. (Journal of Laws) 2013.21, as amended).

Regulation of the Minister of Economy and Labour of 4 August 2004 on the detailed procedure of waste oil management (Dz.U. (Journal of Laws) 04.192.1968)

Act of 13 June 2013 on packagings and packagings wastes (Dz.U. (Journal of Laws) 2013.888 as amended)


Regulation of the Minister of Environment of 29 December 2014 on the waste ((Dz.U. (Journal of Laws) 2013.21).

Section 14: Transport information:

The product is subject to regulations on the transport of dangerous goods included in ADR (road), RID (rail), ADN (inland transport), IMDG (sea), ICAO / IATA (air).

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

	ADR
14.1 UN No. (ONZ No.)	1965
14.2 UN proper shipping name:	HYDROCARBON GAS MIXTURE, LIQUEFIED, I.N.O (mixture B)
	2,2F
14.3 Transport hazard class (es):	
14.4 Packing group:	Not applicable
14.5 Environmental hazards:	Product does not pose a threat to environment in accordance with transport regulations.
14.6 Special precautions for users:	While handling cargo wear personal protective equipment in accordance with Section 8. Quantity excluded: 0 Tunnel restriction code: B/D Hazard identification number: 23 Proceedings: S2, S20
14.7 Bulk transportation according to Annex II to MARPOL 73/78 and the IBC Code:	Not applicable

Section 15: Regulatory information:

15.1 Safety, health and environmental regulations:

1. 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), and establishing a European Chemicals Agency (Official Journal of the European Union L 396 of 30 December 2006, corrigendum: Official Journal of the European Union L 136 of 29 May 2007, as amended).
2. Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of 18 December 2006 (Annex II Guidelines for the preparation of Safety Data Sheets)
3. Commission Regulation (EU) No. 453/2010 of 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).
4. 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
5. (EC) No. 1907/2006 (Official Journal of the EU L 353 of 31 December 2008, as amended).
6. Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing some Directives (OJ of the EU L 312 of 22 November 2008).
7. Council Directive 91/689/EC on hazardous waste, amended by Council Directive 94/31/EEC and extended by Council Decision 94/904 establishing a list of hazardous waste.
8. Regulation (EC) No. 2037/2000 of the European Parliament and of the Council of 29 June 2000 on substances that deplete the ozone layer (OJ EC L No. 244 of 29 September 2000).
9. Council Directive 94/55/EC of 21 November 1994 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by road (OJ L 319 of 12 December 1994), amended by Commission Directive 2004/111/EC (OJ L 365 of 10 December 2004).
10. Act of 25 February 2011 on chemical substances and preparations (Dz.U. (Journal of Laws) 2011.63.322, as amended).
11. Act of 19 August 2011 on transporting hazardous goods by road (Dz.U. (Journal of Laws) 2011.227.1367, as amended).
12. Act of 20 June 1997 on road traffic law (Dz.U. (Journal of Laws) 1997.98.602 as amended).
13. Act of 14 December 2012 on waste (Dz.U. (Journal of Laws) 2013.21, as amended).
14. Act of 13 June 2013 on packagings and packagings wastes (Dz.U. (Journal of Laws) 2013.888 as amended)
15. Regulation of the Minister of Construction of 14 July 2006 on duties of industrial waste suppliers and on conditions of waste-water dump into the sewage system. (Dz.U. (Journal of Laws) 2006.136.964 , as amended).
16. Regulation of the Minister of Labour and Social Policy of 6 June 2014 on maximum permissible concentration and intensity of agents harmful to health in the work environment (Dz.U. (Journal of Laws) 2014.817 as amended).
17. Regulation of the Minister of Health of 10 August 2012 on the criteria and methods of classification of chemical substances and preparations (Dz.U. (Journal of Laws) 2012.1018 as amended)
18. Regulation of the Minister of Health of 20 April 2012 on the criteria and methods of classification of chemical substances and preparations ((Dz.U. (Journal of Laws) 2012.445, as amended).
19. Regulation of the Minister of Health of 22 May 2012 on the methods of marking of places, pipelines, containers and tanks for storing or containing dangerous substances or hazardous mixtures ((Dz.U. (Journal of Laws) 2012.601, as amended).
20. Regulation of the Minister of Health of 2 February 2011 on tests and measurements of agents harmful to health in the work environment (Dz.U. (Journal of Laws) 2011.33.166, as amended)
21. Regulation of the Minister of Health of 30 December 2004 on occupational health and safety related to the presence of chemical agents at the workplace (Dz.U. (Journal of Laws) 2005.11.86, as amended).
22. Regulation of the Minister of Economy and Labour of 4 August 2004 on the detailed procedure of waste oil management (Dz.U. (Journal of Laws) 04.192.1968)
23. Regulation of the Minister of Environment of 9 December 2014 on the waste ((Dz.U. (Journal of Laws) 2014.0.1923, as amended).
24. Regulation of the Minister of Environment of 18 November 2014. On the conditions to be met when dumping sewage into water or soil and on substances particularly harmful to the aquatic environment (Dz.U. (Journal of Laws) 2014.1800, as amended).

15.1 Chemical safety assessment:

A chemical safety assessment has not been made

Safety Data Sheet

Conforms to EC Regulation No.: 1272/2008

Section 16: Other informations:

The data contained herein refer to the product in commercial form.

Classification according to Regulation (EC) No. 1272/2008 was made by calculation.

Hazard statements listed in Sections 2 and 3:

H220	Extremely flammable gas
H222	Extremely flammable aerosol
H280	Contains gas under pressure; may explode if heated.

Hazard class and category codes:

Press. Gas	Pressurised gas	Category	-
Flam. Gas 1	Flammable gas	Category	1
Flam. Aerosol 1	Flammable aerosol	Category	1

Abbreviations and Acronyms:

NDS	Occupational exposure limit
NDSch	Short term occupational exposure limit
NDSP	Threshold Limit Value - Ceiling
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration
RID	Regulation concerning the International Carriage of Dangerous Goods by Rail
ADR	The European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG	International Maritime Dangerous Goods Code
IATA	International Air Transport Association
LD50	Lethal Dosage for 50% of a given test population
LC50	Lethal Concentration for 50% of a given test population
vPvB	very Persistent very Bioaccumulable (Substance)
PBT	Persistent Bioaccumulable Toxic (Substance)
WEL-TWA	Work Exposure Limit – Time Weighted Average
BGW	"Biologischer Grenzwert" (biological limit value, Germany)
STOT RE	Specific target organ toxicity – repeated exposure
STOT SE	Specific target organ toxicity – single exposure
UVCB	Substances of Unknown or Variable composition

This information is compiled based on the current available data concerning the product and the experience and knowledge of the manufacturer. SDS do not constitute a qualitative description of the product or promise certain properties. Should be treated as aid to safety issues for storage, handling and transportation of the product. Does not relieve user from responsibility for the misuse of this information, and comply with all the applicable legal standards in this area. The employer is obliged to inform all employees who have contact in the workplace with the product, about the dangers and personal protection listed in this SDS. Product may not be used without written permission for any purpose other than specified in Section 1 of this SDS.

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