SAFETY DATA SHEET

according to Regulation (EC) № 1907/2006 (REACH), ANNEX II

Calibration gas mixture 97,00 % CH_4 (methane) – 3,00 % N_2 (nitrogen)

Date: 19.05.2023 Version 1.0

1. IDENTIFICATION OF THE PRODUCTS AND OF THE COMPANY

1.1 Product identifier

Trade name:	Calibration gas mixture 97,00 % CH_4 (methane) – 3,00 % N_2 (nitrogen)
Molecular formula:	Not applicable. Mixture

1.2 Relevant identified uses of the products and uses advised against

Identified uses:	Laboratory tests
Uses advice:	Apply calibration gas mixture for its intended purpose and according to the recommendation

1.3 Details of the manufacturer/supplier of the safety data sheet

Manufacturer:	SE "Ukrmetrteststandart"
Address:	4, Metrologichna str. 03143. Kyiv, Ukraine.
Communication tools:	+38 050 3344 205
	Email: V.holevchuk@gmail.com

1.4 Emergency telephone number

+38 050 3344 205

2. HAZARDS IDENTIFICATION

2.1 Classification of product according to Regulation (EC) No 1272/2008 [CLP/GHS]

Flammable gases 1, H220
Gases under pressure, H280

2.2 Label elements

Hazard pictograms:		
Signal word:	**Danger**	
Hazard statements:	H220 H280	Contains gas under pressure; may explode if heated
Precautionary statements:	P210	
Measures for safe handling:	P377 P381	
Safe storage conditions:	P410+P403	Protect from sunlight. Store in a well-ventilated place
Additional labeling requirements:	Absent	

2.3 Other hazards

Calibration gas mixture does not meet the criteria for PBT or vPvB

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Name	CAS	EINECS	Classification (CLP/GHS)	Weight (%), content (or range)
Methane	74-82-8	200-812-7	Flammable gases 1, H220 Gases under pressure, H280	97.0
Nitrogen	7727-37-9	231-783-9	Gases under pressure, H280	3.0

4. FIRST AID MEASURES

4.1 Description of first aid measures

General measures:	Product is safe if you follow the instruction for its application.
In case of eye contact:	No side effects are expected from this product. In case of eye irritation: rinse immediately with plenty of water. See an ophthalmologist if irritation persists.
In case of skin contact:	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly

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	with water before removing it. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse
In case of ingestion:	As this product is a gas, refer to the inhalation section.
In case of inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband

4.2 Most important symptoms and effects, both acute and delayed

Acute symptoms:	See Section 2 and / or Section 11.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment: symptomatic treatment

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:	Use fire-extinguishing equipment that meets local conditions and the environment.
Unsuitable extinguishing media:	There are no restrictions on the choice of conventional fire extinguishing agents

5.2 Special hazards arising from the product

Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Decomposition products may include Carbon Oxides

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance. Eliminate all ignition sources if safe to do so.

Special protective equipment: fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

Remove all incompetent people from the territory. Avoid breathing vapors. Ensure adequate ventilation. Eliminate all sources of ignition

6.1.1 For non-emergency personnel	Stop leak if without risk. Inform the appropriate service
6.1.2 For emergency responders	Use protective equipment in accordance with section 8.

6.2 Environmental precautions

Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).

6.3 Methods and material for containment and cleaning up

Stop leak if without risk

6.4 Reference to other section

Information about personal precautions - see Section 8.
Information about waste disposal - see Section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures: avoid contact with eyes, skin, inhalation. Use in well-ventilated place. Use personal protective equipment. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces

unless adequately ventilated. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage.
Measures to prevent fire: Use only non-sparking tools. Avoid contact with eyes, skin and clothing. Empty containers retain product residue and can be hazardous. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
Environmental precautions: adhere to the technological regime and the rules of storage and transportation of the product. Effective work of ventilation systems.
Advice on occupational hygiene: comply with the rules of personal hygiene

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions:	Storage temperature – 30^0C - + 35^0C. Avoid direct sunlight, sources of ignition
Special requirements for packaging:	Hermetically sealed container intended for storing gases under pressure
Requirements for storage rooms:	Cool, closed well ventilated premises
Additional information on storage requirements:	Do not store near explosive substances

7.3 Specific end use(s)

None

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Maximum permissible concentrations of harmful substances in the air of the working zone	Methane	OEL – 7000 mg/m^3

8.2 Exposure controls

The information in this section contains generic advice and guidance.

8.2.1 Appropriate engineering controls

Provide the mechanization and automation of production processes. Production facilities must be equipped with general exhaust and local ventilation. Conduct periodic monitoring of methane in the air of the working area

8.2.2 Individual protection measures, such as personal protective equipment

Respiratory protection:	Not required when used appropriately. Use self-contained breathing apparatus in emergency or rescue situations
Hands protection:	Working gloves
Eye protection:	Protective goggles
Skin cover protection:	Closed protective clothing

8.2.3 Environmental exposure controls

Measures to prevent exposure:	Equipment sealing

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Gas
Colour	Colorless
Odour	Odorless
Melting point/freezing point, ^{0}C	Not applicable
Boiling point or initial boiling point and boiling range, ^{0}C	No data available
Flammability	Flammable
Lower and upper explosion limit	No data available
Flash point, ^{0}C	Not applicable
Auto-ignition temperature, ^{0}C	No data available
Decomposition temperature, ^{0}C	Not applicable
pH	Not applicable
Kinematic viscosity, mm^2/s	Not applicable

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Solubility	No data available
Partition coefficient n-octanol/water (log value)	No data available
Vapor pressure	No data available
Density and/or relative density	Not applicable
Relative vapor density	No data available
Particle characteristics	Not applicable
9.2 Other information	
9.2.1 Information with regard to physical hazard classes	
Flammable gases 1	
9.2.2 Other safety characteristics	
None	
10. STABILITY AND REACTIVITY	
10.1 Reactivity	Not reactive under conditions of storage and transportation
10.2 Chemical stability	Stable under regular storage and transportation conditions
10.3 Possibility of hazardous reactions	Subject to conditions of storage and transportation of dangerous reactions does not occur
10.4 Conditions to avoid	Avoid direct sunlight. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition
10.5 Incompatible materials	Oxidizers
10.6 Hazardous decomposition products	Carbon Oxides
11. TOXICOLOGICAL INFORMATION	
11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008	
Clinical performance of acute poisoning	No toxicity
The most affected organs, tissues, systems	Does not affect
Acute toxicological indication	Methane - LC50 (15 min) – (1442,738-1443) g/m^3 air (rat)
Skin corrosion/irritation	Does not irritate the skin
Serious eye damage/eye irritation	Does not irritate the eyes
Respiratory or skin sensitization	Not sensitizing
Germ cell mutagenicity	Not expected to be a germ cell mutagen
Carcinogenicity	Not expected to cause cancer
Reproductive toxicity	No toxicity
STOT - single exposure	No adverse effects expected
STOT - repeated exposure	No adverse effects expected
Aspiration hazard	Not classification
11.2 Information on other hazards	
Endocrine disrupting properties	None
Other information	None
12. ECOLOGICAL INFORMATION	
12.1 Toxicity	
Ecotoxicity	The contamination of the environment is possible: air as a result of releases, process flow disruption, incompliance with storage or transportation regulations, the emergency situations and accidents
Ecotoxicity values:	
Acute toxicity to fish:	Methane - LC50 (4 day) – (24,1-147,54) mg/L
Toxicity to aquatic invertebrates:	Methane - LC50 (48 h) – (14,22-69,43) mg/L
Toxicity to aquatic algae and cyanobacteria:	Methane - EC50 (4 day) – (7,71-16,5) mg/L
Toxicity to microorganisms:	No data available

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12.2 Persistence and degradability	
Abiotic Degradation	No data available
Biodegradation	No data available
12.3 Bioaccumulative potential	
Not determined	
12.4 Mobility in soil	
No data available	
12.5 Results of PBT and vPvB assessment	
Product is not PBT or vPvB	
12.6 Endocrine disrupting properties	
None	
12.7 Other adverse effects	
None	

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	
Proper disposal / product	Waste disposal must be carried out in strict accordance with the requirements of national, regional and local waste disposal legislation.
Waste Norms / waste categories by European Waste Catalogue EWC / AVV	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.
Proper disposal / packaging	Packaging must be disposed of in accordance with national, regional and local regulations.

14. TRANSPORT INFORMATION

The product is transported:	By railway (RID)	By road (ADR)	By marine transport (IMDG)	By air transport (IATA/ICAO)
14.1 UN number	1954			
14.2 UN proper shipping name	COMPRESSED GAS, FLAMMABLE, N.O.S.			
14.3 Transport hazard class(es)	2			
14.4 Packing group	Not applicable			
14.5 Environmental hazards	No hazards identified			
14.6 Special precautions for user	No special precautions required			
14.7 Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods			

IATA: Quantity limitation Passenger and Cargo Aircraft: Forbidden. Cargo Aircraft Only: 150 kg.

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the product

1. Regulation (EC) No 1272/2008
2. Regulation (EC) No 453/2010
3. Regulation (EC) No 1907/2006

15.2 Chemical Safety Assessment

Chemical safety assessment has not been carried for the product

16. OTHER INFORMATION

Assignment of safety data sheet	Safety Data Sheet informs downstream users about the hazards of product and ways to prevent its adverse effects on human health and the environment. Safety Data Sheet can be used during custom control, transportation of goods, emergency operations, waste management, development of emergency response plan, briefing, development of special teaching programs, staff qualification, labeling, also can be used as pictorial information and agitation, or product advertising.

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Safety Data Sheet usage	During the development of normative documents concerning occupational safety requirements and environmental protection; as the basis for medical and ecological activities during manufacture, use, storage and transportation of the product, during organization of manufacture and hygienic assessment of working conditions, when importing or exporting as part of support documentation.
Training instructions	Read carefully the Safety Data Sheet before using this product.
Uses advised against when using product	Information applies to a specific product. It may be invalid in case this product is used together with any other materials or in any other production process. A consumer of products is responsible for the consequences of its use in specific purposes.
Abbreviations	OEL – occupational exposure limit; LC50 - average lethal concentration; EC50 - effective concentration; PBT or vPvB - persistent bioaccumulative or very persistent very bioaccumulative substance.
Information sources	Hazardous Substances Database (HSDB) of the US National Library of Medicine. ECHA database of registered substances. GESTIS database of environmental substances.

General director D.A.Sabatovych