SAFETY DATA SHEET

prepared in compliance with the Commission Regulation (EU) no. 830/2015 of 28 May 2015 amending Regulation (EC) no. 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (OJ EU L 133, 31 May 2010)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

COMPRESSED AIR

1.2 Relevant identified uses of the mixture and uses advised against

Identified uses: High-pressure compressed gas for removing dust and dirt from electronic and office equipment
Uses advised against: other than the above

1.3 Details of the supplier of the safety data sheet

Supplier:

Micro Chip Elektronic Barbara Kaczmarczyk
ul. Kochanowskiego 9
40-035 Katowice, Poland
Tel. +48 32 251 36 90

E-mail address of the person responsible for the safety data sheet: biuro@micro-chip.pl

1.4 Emergency telephone number

Emergency telephone number in Poland (open 9:00 AM to 4:00 PM): + 48 32 251 36 90

Prepared on: 7 February 2005
Updated on: 14 April 2017

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the mixture

Classification according to Regulation (EC) No 1272/2008:
Aerosol products, hazard category 1 (Aerosol 1)
Extremely flammable aerosol (H222)

Pressurized container: may burst if heated (H229)

2.2 Label elements

Pictograms:



Signal word: **Danger**

Hazard statements:

H222 - Extremely flammable aerosol.
H229 - Pressurized container: may burst if heated.

Precautionary statements:

P210 - Keep away from sources of heat, hot surfaces, sparks, open flames, and other ignition sources. Smoking is prohibited.
P211 - Do not spray on an open flame or other ignition source.
P251 – Do not puncture or burn, even after use.
P261 – Avoid breathing vapors.
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P410 + P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

If used by consumers, additionally:
P101 - If medical advice is needed, have product container or label at hand.
P102 - Keep out of reach of children.

2.3 Other hazards

No information on compliance with the PBT and vPvB criteria.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

Components of the mixture:

Substance name	index no.	CAS no.	EC no.	mass fraction in %	Classification according to Regulation (EC) no. 1272/2008	
					Hazard classes and category codes	Hazard phrases
Butane	601-004-00-0	106-97-8	203-448-7	< 45	FlamGas1 PressGAs	H220 H280
Isobutane	601-004-00-0	75-28-5	200-857-2	< 45	FlamGas1 PressGAs	H220 H280
Propane	601-003-00-5	74-98-6	200-827-9	< 45	FlamGas1 PressGAs	H220 H280

For the full wording of the H statements and the acronyms for symbols, hazard classes, and category codes see Section 16 of the Safety Data Sheet.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: Move the victim out of the area of exposure, put the victim in a comfortable half-lying or half-sitting position, ensure that the victim stays warm, protect the victim from heat loss. If respiratory disorders occur, use artificial respiration. If the symptoms persist, call a doctor.

Skin contact: Rinse the affected area immediately with plenty of water, remove contaminated clothing, wash the skin with plenty of soap and water. If necessary, consult a doctor.

Eye contact: Rinse the eye(s) immediately with plenty of lukewarm water, preferably running water, for at least 15 minutes. Remove contact lenses. Avoid strong water jets due to the risk of mechanical damage to the cornea. If irritation persists, consult an ophthalmologist.

Gastrointestinal tract: This is an unlikely route of exposure as the product is used as an aerosol. If swallowed, do not cause vomiting, as there is a risk of choking and of the mixture entering the lungs. If the victim is conscious, give plenty of water to drink. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

None

4.3 Indication of any immediate medical attention and special treatment needed

In case of ingestion, contact a doctor immediately.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

Alcohol-resistant foam, carbon dioxide, extinguishing powders, water - dispersed jets.

Unsuitable extinguishing media:

Do not use dense water jets

5.2 Special hazards associated with the mixture

In a fire, carbon monoxide, chlorine, hydrogen chloride, and phosgene are released. Aerosols can explode when heated above 50 °C.

5.3 Advice for firefighters

Gas-tight clothing in anti-electrostatic version, isolating respiratory protective equipment.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing made of natural materials (cotton) or synthetic fibers, gloves made of nitrile rubber (0.4 mm thick), and goggles protecting against drops of liquid. Remove ignition sources (extinguish open fire, declare a ban on smoking and the use of sparking tools). Remove persons not involved in the elimination of the emergency from the affected area. Avoid direct contact with the mixture. Avoid inhaling vapors.

6.2 Environmental precautions

Protect against penetration into drains, surface and ground water, and soil.

6.3 Methods and material for containment and cleaning up

Protect sewer sumps. Place the damaged packaging in a substitute packaging. Dilute the vapors with a water spray. Remove ignition sources (extinguish open fire, declare a ban on smoking and the use of sparking tools). Absorb into a chemically inert binding material (sand, diatomaceous earth), move to tightly closed containers, and hand over to an authorized waste collector. Rinse contaminated surface with water.

6.4 Reference to other sections

Dispose in accordance with the recommendations presented in section 13.

SECTION 7: HANDLING AND STORAGE OF THE MIXTURE

7.1 Precautions for safe handling

Provide adequate general and local ventilation. Keep away from high temperature and ignition sources. Precautions should be taken to avoid contact with skin and eyes when handling the mixture. Do not inhale vapors. Protect against penetration into drains, surface and ground water, and soil. Do not eat, drink or smoke during use. Wash hands during breaks and after work is finished. Remove contaminated clothing immediately, wash it before putting on again.

7.2 Conditions for safe storage, including any incompatibilities:

Product vapor and air may form explosive mixtures. Vapors are heavier than air and accumulate near the floor or ground. Store in original, properly labeled, and tightly closed packaging, in a cool, dry, and well-ventilated storage room, equipped with explosion-proof electrical and ventilation systems. Pressurized containers: protect from sunlight, do not expose to temperatures above 50°C. Store away from high temperature and ignition sources, and oxidants. Protect against sunlight.

7.3 Specific end use(s)

No information on uses other than those listed in section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Substance name	Standard	value	unit
Propane	TLV-TWA	1,800	mg/m^3
	TLV-STEL	none	

Butane	TLV-TWA	1,900	mg/m^3
	TLV-STEL	3,000	mg/m^3

8.2 Exposure controls

8.2.1 *Suitable engineering controls*

Local ventilation must be ensured to remove vapors from their emission sites as well as provide general ventilation in the room. Suction openings of local ventilation at the work surface or below. Exhausts of general ventilation in the upper part of the room and at the floor. The ventilation systems must comply with the conditions defined due to the fire hazard. Do not use near high temperature or ignition sources. In the event of insufficient ventilation, use breathing protection equipment.

8.2.2 *Individual protection measures, such as personal protective equipment:*

Respiratory tract: Use respiratory protection if the permissible vapor concentrations are exceeded.

Hands and skin: Wear protective clothing made of natural materials (cotton) or synthetic fibers, as well as protective gloves,

Eyes: goggles, a mask, and safety goggles with side protection.

Work hygiene: The general regulations applicable to industrial occupational hygiene apply. Do not allow the permissible concentration standards to be exceeded in the workplace environment. Remove contaminated clothing after finishing work. Wash hands and face before breaks at work. Wash the whole body thoroughly after work. Do not eat, drink, or smoke during work.

8.2.3 *Environmental exposure controls*

Secure against entering the city's water supply and sewage system and watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance
aerosol

b) Odor
characteristic

c) Odor threshold
No data available.

d) pH
Not determined.

e) Melting point/freezing point
No data available.

f) Initial boiling point and boiling range
No data available.

g) Flash point
No data available.

h) Evaporation rate
No data available.

i) Combustibility
Extremely flammable aerosol.

j) Upper/lower flammability or explosive limits
9.5%(v/v) / 2.1%(v/v)

k) Vapor pressure
not less than 0.100 MPa (20 ºC), not more than 2.55 MPa (70 ºC)

l) Vapor density:
Heavier than air.
m) Relative density
0.50 g/ml
n) Solubility
Insoluble in water.
o) Partition coefficient: n-octanol/water
No data available.
p) Self-ignition temperature
No data available.
q) Decomposition temperature
No data available.
r) Viscosity
No data available.
s) Explosive properties
Does not present an explosion hazard, but the vapors of the mixture may form explosive mixtures with air.
t) Oxidizing properties
No data available for the mixture.

9.2 Other information
No data available.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
In conditions of storage and handling as intended - no reactivity.
10.2 Chemical stability
In normal use and storage conditions, the product is stable.
10.3 Possibility of hazardous reactions
The container contains gas under increased pressure - protect it from sunlight, do not exceed 50 °C. Vapors form explosive mixtures with air.
10.4 Conditions to avoid:
High temperature, ignition sources, open fire.
10.5 Incompatible materials
None.
10.6 Hazardous decomposition products
- carbon oxides
- toxic gases and fumes

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Toxic doses and concentrations:
Propane:
Odor perception threshold: 9,022 ÷ 36,088 mg/m3

Butane:
Odor perception threshold: 6,240 mg/m3
LC50 (rat, inhalation) : 658,000 mg/m3/4 hours

Aspiration/inhalation:
When used directly, may cause coughing and sneezing.
Eyes/skin:
May cause mechanical eye irritation.
Ingestion:
It is unlikely to be swallowed because of its form. May cause nausea, vomiting, and abdominal pain.
Sensitization:
- contains no sensitizing substances

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
The mixture is not classified as hazardous
12.2 Persistence and degradability
No tests are available for the product
12.3 Bioaccumulative potential
No tests are available for the product
12.4 Mobility in soil
No data available.
12.5 Results of PBT and vPvB assessment
The mixture does not meet the PBT and vPvB criteria.
12.6 Other adverse effects
No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Product
Waste type: Gases in pressure containers other than those mentioned in 16 05 04
Waste code: 16 05 05
Hazardous waste
Packaging
Waste type: multi-material packaging 16 05 04
Waste code: 15 01 05

SECTION 14: TRANSPORT INFORMATION

ADR/RID, IMDG, IATA
14.1 UN number
1950

14.2 Proper UN shipping name
AEROSOLS.
14.3 Hazard class(es) in transport
2.5F
1.4. Packaging group
None
14.5 Environmental hazards
No recommendations
14.6 Special precautions for the user
No recommendations.
14.7 Transport in bulk in accordance with Annex Ii to the MARPOL 73/78 convention and the IBC code
Not applicable.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the mixture
Act of 25 February 2011 on chemical substances and their mixtures (Journal of Laws of 2011, no. 63, item 322).
REGULATION (EC) NO. 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) no. 1907/2006 (OJ EU L, 353, 31 December 2008), as amended (adaptations to technical progress 1 - 6 ATP).
Regulation of the Minister of Health of 10 August 2012 concerning the criteria and the methods of classification of chemical substances and their mixtures (Journal of the Minister, 2012, item 1018), as amended.
Regulation of the Minister of Economy of 21 December 2005 concerning the principal requirements for personal protective equipment (Journal of Laws of 2005, no. 259, item 2173).
Regulation of the Minister of Labor and Social Policy of 6 June 2014 concerning the highest permitted concentrations and intensities of factors that are harmful to health in work environments (Journal of Laws of 23 June 2014, item 817).
Regulation of the Minister of Health of 2 February 2011 concerning tests and measurements of agents harmful to health in the work environment (Journal of Laws of 2011, no. 33, item 166).
Regulation of the Minister of Health of 30 December 2004 concerning occupational health and safety related to presence of chemical agents at the place of work (Journal of Laws of 2005, no. 11, item 86, as amended). Act of 19 August 2011 on transport of hazardous commodities (Journal of Laws of 2011, item 1367, as amended).
Government Declaration of 26 July 2005 concerning entry into force of changes to Annexes A and B of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), drafted in Geneva on 30 September 1957 (Journal of Laws of 2005, no. 178, item 1481, as amended).
Act of 14 December 2012 on waste (Journal of Laws of 2013, item 21).
Act of 13 June 2013 on management of packaging and packaging waste (Journal of Laws of 2013, item 888).
Regulation of the Minister of Environment of 27 September 2001 concerning the waste catalog (Journal of Laws of 2001, no. 112, item 1206).
1206, 2001).
Act of 29 July 2005 amending the Act on waste and certain other laws (Journal of Laws of 2005, no. 175, item 1458).
Regulation of the Minister of Economy of 5 November 2009 on specific requirements for aerosol products (Journal of Laws of 2009, no. 188, item 1460), as amended.

COMMISSION DIRECTIVE 2013/10/EU of 19 March 2013 amending Council Directive 75/324/EEC on the approximation of the laws of the Member States relating to aerosol dispensers in order to adapt its labeling provisions to Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labeling and packaging of substances and mixtures (OJ EU L, no. 77, 20 March 2013).
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 (OJ EU L, no. 396, 30 December 2006, as amended).

15.2 Chemical safety assessment

The supplier has not performed a chemical safety assessment of the mixture.

SECTION 16: OTHER INFORMATION

The safety data sheet is based on the recipe and safety data sheets of the ingredients.

Other sources of Information:
Data for registered substances: http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances

The information in the safety data sheet is intended to describe the product only in terms of safety requirements. The user is responsible for creating the conditions for safe use of the product and he or she assumes responsibility for the consequences resulting from the misuse of this product.

H statements (indicating the type of hazard) and acronyms for symbols, hazard classes, and category codes **used in section 3 of the Safety Data Sheet.**

H220	Extremely flammable gas
H222	Extremely flammable aerosol.
H229	Pressurized container: may burst if heated
H280	Contains gas under pressure; may explode if heated
Flam. Liq. 1	Flammable liquid, hazard category 1.
PressGas	Pressurized gases

Abbreviations/acronyms:
TLV-TWA - threshold limit value − time-weighted average, the highest permissible value of concentration of substances harmful to the health in the work environment whose impact on a worker during an 8-hour work time, for the entire period of his or her professional activity, should not cause changes in his or her health and in the health of future generations.
TLV-STEL - threshold limit value − short-term exposure limit; the highest momentary permissible value of concentration of substances harmful to the health in the work environment, specified as an average value, which should not cause negative changes in the health of a worker and in the health of future generations if it persists in the work environment for no more than 30 minutes during a work shift.
vPvB - a very persistent and very bioaccumulative substance.
PBT - A persistent, bioaccumulative, and toxic substance.
DL_{50} - lethal dose - a dose at which the death of 50% of the animals tested is observed during the specified time interval.

CL_{50} - lethal concentration - a concentration at which the death of 50% of the animals tested is observed during the specified time interval.

CI_{50} - media concentration causing 50% inhibition of a given parameter, e.g. growth over a certain period of time.

CE_{50} - effective concentration - an effective concentration of the substance causing a reaction on the level of 50% of the maximum value.

DNEL - derived no effect level - a level of exposure to a substance that is not harmful to human health.

PNEC -predicted no-effect concentration - a concentration of a substance below which no harmful effects on the environment are expected to occur.

BCF - bio-concentration factor - a ratio of the concentration of a substance in the body to its concentration in water at equilibrium.

ADR - European Agreement on Dangerous Goods by Road.

RID - Regulations Concerning the International Transport of Dangerous Goods by Rail.

IMDG - International Maritime Dangerous Goods Code.

IATA - International Air Transport Association. CAS - a number assigned to a chemical in the Chemical Abstracts Service list.

EC - a reference number used in the European Union to identify dangerous substances, in particular those registered in the European Inventory of Existing Chemical Substances (EINECS) or in the European List of Notified Chemical Substances (ELINCS), or in the list of chemicals contained in the "No-longer polymers" publication.

UN number - a four-digit identification number of a material in the UN list of hazardous materials, derived from the "UN Model Regulations," under which an individual material, mixture, or object is classified.

The product is subject to submission to the register kept by the Chemicals Office in Łódź