# SAFETY DATA SHEET

## Pro Stainless Heavy

**ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830 AS AMENDED BY UK REACH REGULATIONS SI 2019/758**

Date of issue: 09/03/2026
Version: 1.0

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

**1.1 Product identifier**

| | |
|---|---|
| Product name | Pro Stainless Heavy |
| Product type | Gaseous Mixture |
| Product storage | Sold in Cylinders |

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

| | |
|---|---|
| Identified Use(s) | Industrial and professional uses.<br>Perform risk assessment prior to use.<br>Shielding gas for gas metal arc welding (GMAW / MIG) of stainless steel. |
| Uses advised against | Anything other than the above. |

**1.3 Details of the supplier of the safety data sheet**

| | |
|---|---|
| Company Identification | Pro Gases UK<br>28 Forth Street,<br>Bootle,<br>Liverpool,<br>United Kingdom,<br>L20 8JW |
| Telephone | 0151 922 1118 |
| E-mail (competent person) | info@progasesuk.com |

**1.4 Emergency Telephone Number**

| | | |
|---|---|---|
| Emergency Phone No. | +44 (0) 127356 9048 | Available 24/7 |
| Language(s) spoken: | English | |

## SECTION 2: HAZARDS IDENTIFICATION

**2.1 Classification of the substance or mixture**

**2.1.1 The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain**

Press. Gas (Comp.); H280

**2.2 Label elements**

According to the retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain

Product description: Pro Stainless Heavy

Hazard Pictogram(s)

Signal Word(s): WARNING

Hazard Statement(s): H280: Contains gas under pressure; may explode if heated.

Precautionary Statement(s): P410+P403: Protect from sunlight. Store in a well-ventilated place.

**2.3 Other hazards**

Asphyxiant in high concentrations.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**3.1 Substances** - Not applicable

**3.2 Mixtures**

EC Classification Regulation (EC) No. 1272/2008 (CLP)

| Chemical identity of the substance | %W/W | CAS No. | EC No. | REACH Registration No. | Hazard Statement(s) |
|---|---|---|---|---|---|
| Argon (Ar) | 60.0 | 7440-37-1 | 231-147-0 | Exemptions apply | Press. Gas (Comp.); H280 |
| Helium (He) | 38.0 | 7440-59-7 | 231-168-5 | Exemptions apply | Press. Gas (Comp.); H280 |
| Carbon dioxide* | 2.0 | 124-38-9 | 204-696-9 | Exemptions apply | Press. Gas (Comp.); H280 |

Note: For full text of H phrases see section 16. *Substance with a community workplace exposure limit

## SECTION 4: FIRST AID MEASURES

**4.1 Description of first aid measures**

Self-protection of the first aider: No action should be taken involving personal risk. Asphyxiant in high concentrations. Avoid inhalation of high concentrations of gas. Eliminate sources of ignition. Use personal protective equipment as required. The vapour is heavier than air; beware of pits and confined spaces. If it is suspected that fumes are still present, the responder should wear an appropriate mask or self-contained breathing apparatus.

Inhalation: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Apply artificial respiration if breathing has ceased or shows signs of failing. In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation. Keep warm and at rest.

Skin contact: Dermal exposure is considered to be not relevant. Rapid release of gas may cause frostbite. Do not attempt to remove clothing that adheres to the skin due to freezing. Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

Eye contact: Unlikely route of exposure. Rapid release of gas may cause cold burns or corneal damage. Immediately flush eyes for at least 15 minutes using lukewarm water. Do not rub affected area. Obtain prompt consultation, preferably from an ophthalmologist.

Ingestion: Oral exposure is considered to be not relevant.
IF SWALLOWED: Rinse mouth. Get medical advice/attention if you feel unwell.

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

In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation. Headaches and dizziness may occur, proceeding to fainting or unconsciousness; large doses may result in coma and death. Rapid release of gas may cause frostbite

**4.3 Indication of any immediate medical attention and special treatment needed**

Treat symptomatically. Rapid release of gas may cause frostbite. Treat cold burns as frostbite. Thaw frosted parts with lukewarm water. Do not rub affected area.

Notes to a physician: Asphyxiant in high concentrations. Exposure to significant quantities may cause delayed pulmonary oedema. Treat cold burns as frostbite.

## SECTION 5: FIREFIGHTING MEASURES

**5.1 Extinguishing media**

Suitable extinguishing media: As appropriate for surrounding fire. Foam, CO2 or dry powder

Unsuitable extinguishing media: Do not use water jet. Direct water jet may spread the fire.

**5.2 Special hazards arising from the substance or mixture**

Not flammable. Does not support combustion. The vapour is heavier than air; beware of pits and confined spaces.

Hazardous decomposition products: May generate concentrations of Carbon monoxide/ Ozone

Compressed gas: Contains gas under pressure; may explode if heated. Sealed containers may rupture explosively if hot. Do not pierce or burn, even after use.

| | | |
|---|---|---|
| **5.3** | **Advice for firefighters** | Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. |

## SECTION 6: ACCIDENTAL RELEASE MEASURES

| | | |
|---|---|---|
| **6.1** | **Personal precautions, protective equipment and emergency procedures** | Shut off source of leak if safe to do so. Eliminate all ignition sources if safe to do so. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Wear suitable protective clothing. Contaminated clothing should be thoroughly cleaned. The vapour is heavier than air; beware of pits and confined spaces. |
| **6.2** | **Environmental precautions** | Avoid release to the environment. |
| **6.3** | **Methods and material for containment and cleaning up** | Only trained and properly protected personnel must be involved in clean-up operations. Ensure adequate ventilation. Isolate the area and allow gas to disperse. |
| | Small scale | Allow gas to disperse naturally in a well-ventilated area. Prevent access until ventilation has restored safe oxygen level. (>19.5% $O_2$). |
| | Large scale | Evacuate area. Fight fire remotely due to the risk of explosion. Notify police and fire brigade as soon as possible. Prevent access until ventilation has restored safe oxygen level. (>19.5% $O_2$). |
| **6.4** | **Reference to other sections** | See sections 8 and 13 |

## SECTION 7: HANDLING AND STORAGE

| | | |
|---|---|---|
| **7.1** | **Precautions for safe handling** | Workers in the risky process/areas identified should be trained. Do not handle until all safety precautions have been read and understood. The vapour of the product is heavier than air and may accumulate below ground level, in pits, channels and basements in higher concentration. Avoid inhalation of high concentrations of gas. Ensure adequate ventilation. In case of inadequate ventilation wear respiratory protection. Do not open valve until connected to equipment prepared for use. Close valve after each use and when empty. Do not eat, drink or smoke at the work place. Wash contaminated clothing before reuse. Wash hands before breaks and after work. |
| **7.2** | **Conditions for safe storage, including any incompatibilities** | Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Keep container in an upright position. Isolate from reducers and flammable/ combustible materials etc in storage. |
| | Storage temperature | Keep cool. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F. |
| | Incompatible materials | No known incompatible materials. |
| **7.3** | **Specific end use(s)** | See Section: 1.2 |

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1 Control parameters**

**8.1.1 Occupational exposure limits**

**European Union**

| SUBSTANCE | CAS No. | LTEL (8 hr TWA ppm) | LTEL (8 hr TWA mg/m³) | STEL (ppm) | STEL (mg/m³) | Note |
|---|---|---|---|---|---|---|
| Carbon dioxide | 124-38-9 | 5000 | 9000 | - | - | - |

Source: IOELV: Indicative Occupational Exposure Limit Value

**United Kingdom (Great Britain & Northern Ireland)**

| SUBSTANCE | CAS No. | LTEL (8 hr TWA ppm) | LTEL (8 hr TWA mg/m³) | STEL (ppm) | STEL (mg/m³) | Note |
|---|---|---|---|---|---|---|
| Carbon dioxide | 124-38-9 | 5000 | 9150 | 15000 | 27400 | - |

Source: Workplace Exposure Limit (UK HSE EH40).

**8.1.2 Biological limit value** — Not established.

**8.1.3 PNECs and DNELs** — Not established.

**8.2 Exposure controls**

**8.2.1 Appropriate engineering controls** — Provide adequate ventilation, including appropriate local extraction if dusts, fumes or vapours are likely to be evolved. Install Gas detectors for toxic gases/vapours and oxygen - use and operation Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources.

**8.2.2 Individual protection measures, such as personal protective equipment** — Do not breathe gas. Fuels are typically used, transferred and transported in closed systems. Keep good industrial hygiene. Do not eat, drink or smoke at the work place.

Eye/ face protection

Not normally required.

Wear safety goggles in accordance with EN ISO 16321 as a protection against mechanical risks.

Skin protection

Wear gloves in accordance with EN 388 as a protection against mechanical risks.

**Body protection**: Apron or other light protective clothing, boots and plastic or rubber gloves. Wear safety shoes (EN344).

Respiratory protection

In case of inadequate ventilation wear respiratory protection.
Recommended: BS EN 14387:2004+A1

Thermal hazards — Rapid release of gas may cause frostbite.

**8.2.3 Environmental exposure controls** — Avoid release to environment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**9.1 Information on basic physical and chemical properties**

| | |
|---|---|
| Appearance | Colourless Compressed gas |
| Odour | Odourless |
| Odour threshold | Do not depend on odor to detect presence of gas. |
| pH | Not applicable |
| Melting point/freezing point | No data available |
| Initial boiling point and boiling range | No data available |
| Flash point | Not applicable |
| Evaporation rate | Not applicable |
| Flammability (solid, gas) | Not flammable |
| Upper/lower flammability or explosive limits | Not applicable |
| Vapour pressure | No data available |
| Vapour Density (Air=1) | 0.71 @ 15°C |
| Relative density | No data available |
| Solubility(ies) | No data available |
| Partition coefficient: n-octanol/water | Not established |
| Auto-ignition temperature | Not applicable |
| Decomposition temperature | Not established |
| Viscosity | Not applicable |

| | | |
|---|---|---|
| | Explosive properties | Not explosive |
| | Oxidising properties | Not oxidising. |
| **9.2** | **Other information** | None |

## SECTION 10: STABILITY AND REACTIVITY

| | | |
|---|---|---|
| **10.1** | **Reactivity** | Stable under normal conditions. |
| **10.2** | **Chemical stability** | Chemically inert gas**.** Stable under normal conditions. |
| **10.3** | **Possibility of hazardous reactions** | No hazard expected under normal conditions of use. |
| **10.4** | **Conditions to avoid** | Keep away from heat and sources of ignition. Sealed containers may rupture explosively if hot. Use only in well-ventilated areas. In high concentration the gas may cause a suffocation. Victim may not be aware of asphyxiation. |
| **10.5** | **Incompatible materials** | No known incompatible materials. |
| **10.6** | **Hazardous decomposition products** | May generate concentrations of Carbon monoxide/ Ozone |

## SECTION 11: TOXICOLOGICAL INFORMATION

**11.1 Information on toxicological effects**

| | |
|---|---|
| **Acute toxicity - Ingestion** | Mixture: Based upon the available data, the classification criteria are not met.<br>Acute Toxicity Estimate Mixture Calculation: LD50 >2000 mg/kg bw |
| **Acute toxicity - Inhalation** | Mixture: Based upon the available data, the classification criteria are not met.<br>Acute Toxicity Estimate Mixture Calculation: LC50 > 20,000 ppm (Gases) |
| **Acute toxicity - Skin contact** | Mixture: Based upon the available data, the classification criteria are not met.<br>Acute Toxicity Estimate Mixture Calculation: LD50 >2000 mg/kg bw |
| **Skin corrosion/irritation** | Mixture: Based upon the available data, the classification criteria are not met. |
| **Serious eye damage/irritation** | Mixture: Based upon the available data, the classification criteria are not met. |
| **Respiratory or skin sensitisation** | Mixture: Based upon the available data, the classification criteria are not met. |
| **Germ cell mutagenicity** | Mixture: Based upon the available data, the classification criteria are not met. |
| **Carcinogenicity** | Mixture: Based upon the available data, the classification criteria are not met. |
| **Reproductive toxicity** | Mixture: Based upon the available data, the classification criteria are not met. |
| **STOT - Single Exposure** | Mixture: Based upon the available data, the classification criteria are not met. |
| **STOT - Repeated Exposure** | Mixture: Based upon the available data, the classification criteria are not met. |
| **Aspiration hazard** | Mixture: Based upon the available data, the classification criteria are not met.<br>Product form: Gas |

**11.2 Other information** None.

## SECTION 12: ECOLOGICAL INFORMATION

| | | |
|---|---|---|
| **12.1** | **Toxicity** | Mixture: Based upon the available data, the classification criteria are not met.<br>Estimated LC50 (Mixture): > 100 mg/l/96h |
| **12.2** | **Persistence and degradability** | Testing can be waived because mixture is a gas. |
| **12.3** | **Bioaccumulative potential** | Testing can be waived because mixture is a gas. |
| **12.4** | **Mobility in soil** | Testing can be waived because mixture is a gas. |
| **12.5** | **Results of PBT and vPvB assessment** | Not classified as PBT or vPvB. |
| **12.6** | **Other adverse effects** | None Known. |

## SECTION 13: DISPOSAL CONSIDERATIONS

| | | |
|---|---|---|
| **13.1** | **Waste treatment methods** | Refer to the EIGA code of practice. (Doc.30 "Disposal of Gases", downloadable at http://www.eiga.org). Disposal should be in accordance with local, state or national legislation. |
| | EU Waste Codes: | Container: 16 05 05: Gases in pressure containers other than those mentioned in 16 05 04 |
| **13.2** | **Additional information** | Pressurized container: Do not pierce or burn, even after use. |

## SECTION 14: TRANSPORT INFORMATION

| | | ADR/RID | IMDG | IATA/ICAO |
|---|---|---|---|---|
| **14.1** | **UN number** | UN 1956 | UN 1956 | UN 1956 |
| **14.2** | **UN proper shipping name** | COMPRESSED GAS, N.O.S (Argon, Helium) | COMPRESSED GAS, N.O.S (Argon, Helium) | COMPRESSED GAS, N.O.S (Argon, Helium) |
| **14.3** | **Transport hazard class(es)** | 2 | 2 | 2 |
| **14.4** | **Packing group** | None assigned | None assigned | None assigned |
| **14.5** | **Environmental hazards** | Not classified | | |
| **14.6** | **Special precautions for user** | See Section: 2 | | |
| **14.7** | **Transport in bulk according to Annex II of Marpol and the IBC Code** | Not applicable | Not applicable | Not applicable |
| **14.8** | **Additional information** | | | |

| | |
|---|---|
| Special Provisions | 274, 378, 392, 655, 662 |
| Limited Quantities | 120 mL |
| Transport category | 3 |
| Tunnel restriction code | (E) |

## SECTION 15: REGULATORY INFORMATION

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

**15.1.1 EU regulations**

Authorisations and/or restrictions on use: Not restricted

**15.1.2 National regulations**

UK Authorisations and/or restrictions on use: Not restricted

**15.2 Chemical Safety Assessment**: A chemical safety assessment is not required under REACH.

## SECTION 16: OTHER INFORMATION

**The following sections contain revisions or new statements:** Not applicable – V1.0

**References:**

Existing Safety Data Sheet (SDS)

EU classification and labelling inventory for Argon (Ar) (CAS No. 7440-37-1); Helium (He) (CAS No. 7440-59-7); Carbon dioxide (CAS No.124-38-9)

Classification: This Safety Data Sheet was prepared in accordance with EC Regulation (EC) 1907/2006 (REACH), 1272/2008 (CLP) & 2015/830. Compiled in accordance with REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

| **Classification of the substance or mixture. The retained CLP Regulation (EU) No 1272/2008, as amended for Great Britain** | **Classification procedure** |
|---|---|
| Press. Gas (Comp.); H280 | Product form; On basis of test data. |

**Legend**

| | |
|---|---|
| CAS | Chemical Abstracts Service |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| DNEL | Derived no effect level |
| EC | European Community |
| ECHA | European Chemicals Agency |
| EN | European Standard |
| EU | European Union |
| IATA | International Air Transport Association |
| IBC | Intermediate Bulk Container |
| ICAO/IATA | ICAO: International Civil Aviation Organization / IATA: International Air Transport Association |
| IMDG | International Maritime Dangerous Goods |
| LC50 | Lethal concentration at which 50% of the population is killed |
| LD50 | Lethal dose at which 50% of the population is killed |

| | |
|---|---|
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| UK | United Kingdom |
| UN | United Nations |
| vPvB | very Persistent and very Bioaccumulative |

**Hazard classification / Classification code:**
Press. Gas (Comp.); Gases under pressure (Compressed gas)

**Hazard Statement(s)**
H280: Contains gas under pressure; may explode if heated.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

For detailed guidance on safe handling, storage, and transport of cryogenic liquids in the UK, refer to industry standards such as:

1. BCGA CP 44: The Storage of Gas Cylinders
2. BCGA Guidance Note 11 (GN 11): Reduced Oxygen - The Hazards.

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