

SAFETY DATA SHEET

1. Identification

Product identifier	Helium
Other means of identification	
SDS number	WC032
Synonyms	HELIUM-4
Recommended use	Not available.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Manufacturer/Supplier	Worthington Cylinders
Address	200 Old Wilson Bridge Road Columbus, OH 43085 United States
E-mail address:	SDSRequest@worthingtonindustries.com
Telephone Number:	877-324-4091
CHEMTREC - 24 HOURS:	(800) 424-9300 (CCN 24850)

2. Hazard(s) identification

Physical hazards	Gases under pressure	Compressed gas
Health hazards	Not classified.	
OSHA defined hazards	Not classified.	
Label elements		



Signal word	Warning
Hazard statement	Contains gas under pressure; may explode if heated. May displace oxygen and cause rapid suffocation.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Protect from sunlight. Store in a well-ventilated place.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
Helium	HELIUM-4	7440-59-7	100

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
Skin contact	Frostbite: Do not remove clothes, but flush with copious amounts of lukewarm water. Get medical attention if any discomfort continues.
Eye contact	Frostbite: Immediately and briefly flush with lukewarm, gently flowing water. Cover both eyes with a sterile dressing. Immediately obtain medical attention. GAS: Not applicable. No effects expected.

Ingestion	Not relevant, due to the form of the product.
Most important symptoms/effects, acute and delayed	Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Inhalation: May cause drowsiness or dizziness. Unconsciousness. Very high exposure can cause suffocation from lack of oxygen.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Cool containers exposed to heat with water spray and remove container, if no risk is involved.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	Contents under pressure. Pressurized container may explode when exposed to heat or flame.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Ensure adequate ventilation. Avoid breathing gas. For personal protection, see Section 8 of the SDS. In the event of a leak evacuate all personnel until ventilation can restore oxygen concentrations to safe levels.
Methods and materials for containment and cleaning up	Stop the flow of material, if this is without risk. For waste disposal, see Section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Provide adequate ventilation. Handle and open container with care. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Contents under pressure. Keep at temperature not exceeding 52 °C. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (See Section 10).

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	General ventilation normally adequate.
Individual protection measures, such as personal protective equipment	
Eye/face protection	If contact is likely, safety glasses with side shields are recommended.
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves.
Other	Contact with liquefied gas might cause frostbites, in some cases with tissue damage.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of gas, use suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Compressed gas.
Physical state	Gas.
Form	Compressed gas.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not applicable.

pH	Not applicable.
Melting point/freezing point	-457.87 °F (-272.15 °C)
Initial boiling point and boiling range	-452.02 °F (-268.9 °C)
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not applicable.
Vapor density	0.000165 g/ml @ 21 °C.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Negligible in water.
Partition coefficient (n-octanol/water)	No data available.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Molecular formula	He
Molecular weight	4 g/mol
Percent volatile	100 % v/v

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat and direct sunlight.
Incompatible materials	None known.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Not likely, due to the form of the product.
Inhalation	Suffocation (asphyxiant) hazard - if allowed to accumulate to concentrations that reduce oxygen below safe breathing levels.
Skin contact	Contact with liquefied gas may cause frostbite.
Eye contact	Not likely, due to the form of the product.

Symptoms related to the physical, chemical and toxicological characteristics Exposure to rapidly expanding gas or vaporizing liquid may cause frostbite ("cold burn"). Inhalation: May cause drowsiness or dizziness. Unconsciousness. Very high exposure can cause suffocation from lack of oxygen.

Information on toxicological effects

Acute toxicity	Gas or vapor displaces oxygen available for breathing (asphyxiant).
Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Not classified.
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not classified.
Chronic effects	None known.

12. Ecological information

Ecotoxicity	Not relevant, due to the form of the product.
Persistence and degradability	Not relevant, due to the form of the product.
Bioaccumulative potential	No data available.
Mobility in soil	Not relevant, due to the form of the product.
Other adverse effects	No data available.

13. Disposal considerations

Disposal instructions	Dispose waste and residues in accordance with applicable federal, state, and local regulations.
Hazardous waste code	Not regulated.
Waste from residues / unused products	Dispose in accordance with all applicable regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1046
UN proper shipping name	Helium, compressed
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Packing group	Not applicable.
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Packaging exceptions	306, 307
Packaging non bulk	302
Packaging bulk	302, 314
2.2	

IATA

UN number	UN1046
UN proper shipping name	Helium, compressed
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	No.
ERG Code	2L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1046
UN proper shipping name	HELIUM, COMPRESSED
Transport hazard class(es)	
Class	2.2
Subsidiary risk	-
Packing group	Not applicable.
Environmental hazards	
Marine pollutant	No.
EmS	F-C, S-V
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - Yes
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Total food additive
Direct food additive
GRAS food additive

US state regulations

US. Massachusetts RTK - Substance List

Helium (CAS 7440-59-7)

US. New Jersey Worker and Community Right-to-Know Act

Helium (CAS 7440-59-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Helium (CAS 7440-59-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 03-February-2014

Revision date -

Version # 01

NFPA Ratings



Disclaimer

All information in this Material Safety Data Sheet is believed to be accurate and reliable. However, no guarantee or warranty of any kind is made with regard to the accuracy of information or the suitability of the recommendations contained herein. It is the user's responsibility to assess the safety and toxicity of this product under their own conditions of use and to comply with all applicable laws and regulations.