

## 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:** cylinders@worthingtonindustries.com

**Telephone Number:** 866-928-2657

**CHEMTREC - 24 HOURS:** (800) 424-9300

## 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.

<b>Ingestion</b>	Not relevant, due to the form of the product.
<b>Most important symptoms/effects, acute and delayed</b>	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.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

## 5. Fire-fighting measures

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

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	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.
<b>Methods and materials for containment and cleaning up</b>	Stop the flow of material, if this is without risk. For waste disposal, see Section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

<b>Precautions for safe handling</b>	Provide adequate ventilation. Handle and open container with care. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	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

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

<b>Appearance</b>	Compressed gas.
<b>Physical state</b>	Gas.
<b>Form</b>	Compressed gas.
<b>Color</b>	Colorless.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not applicable.

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

## 10. Stability and reactivity

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

## 11. Toxicological information

### Information on likely routes of exposure

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

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

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

## 12. Ecological information

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

## 13. Disposal considerations

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

## 14. Transport information

### DOT

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

### IATA

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

### IMDG

<b>UN number</b>	UN1046
<b>UN proper shipping name</b>	HELIUM, COMPRESSED
<b>Transport hazard class(es)</b>	
<b>Class</b>	2.2
<b>Subsidiary risk</b>	-
<b>Packing group</b>	Not applicable.
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	No.
<b>EmS</b>	F-C, S-V
<b>Special precautions for user</b>	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).

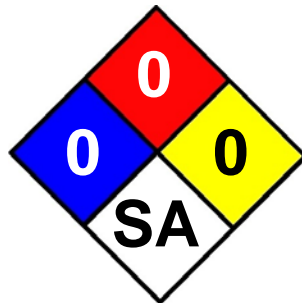
## 16. Other information, including date of preparation or last revision

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.