



Safety Data Sheet

Sol-U-Gro® 12-48-8

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03
Canadian Workplace Hazardous Material Information System (WHMIS) 2015
Mexico NOM-018-STPS-2000; NOM-018-STPS-2015
GHS (Globally Harmonized System)

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Sol-U-Gro® 12-48-8
Pure substance/mixture Mixture

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

Recommended use Soluble Fertilizer.
Uses advised against None known

1.3. Details of the supplier of the safety data sheet

Manufacturer Miller Chemical and Fertilizer, LLC
120 Radio Rd
Hanover, PA 17331
Tel.: 717-632-8921
Fax.: 717-646-1104

Internet <http://www.millerchemical.com>

E-mail info@millerchemical.com

1.4. Emergency telephone number CHEMTREC: +1 800 424 9300 or International 1+703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

OSHA Regulatory Status This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Physical Hazards Not classified.

Health Hazards Repr. Tox. Cat. 1B; H360

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Environmental Hazard

Not classified.

2.2. Label elements**Symbols/Pictograms****Signal Word**

Danger

Hazard Statements

May damage fertility or the unborn child

Precautionary Statements**Prevention**

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection

Response

IF exposed or concerned: Get medical advice/attention

Storage

Store locked up

Disposal

Dispose of contents/containers in accordance with local regulations

Additional information

Not applicable

Hazards not otherwise classified (HNOC)

None known

SECTION 3: Composition/information on ingredients**Pure substance/mixture**

Mixture

Chemical Name	CAS NUMBER:	Weight-%
Boric acid	10043-35-3	0.1 - < 0.3

Additional information

*The exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4: First aid measures**4.1. Description of first aid measures****General Advice**

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

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Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. Get medical attention.

Ingestion

DO NOT INDUCE VOMITING. If vomiting occurs naturally, reduce the risk of aspiration by leaning their body forward. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Inhalation

Remove to fresh air. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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

None known.

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

Treatment should be symptomatic and supportive. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

SECTION 5: Firefighting measures**5.1. Extinguishing media****Suitable Extinguishing Media**

Alcohol-resistant foam. Carbon dioxide (CO₂). Water spray (fog). Dry chemical. Halon.

Unsuitable Extinguishing Media

None known.

5.2. Special hazards arising from the substance or mixture

Dust in sufficient concentration can result in an explosive mixture in air.

5.3. Advice for firefighters**Special protective equipment for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

Fire-fighting measures

Water mist may be used to cool closed containers. No special fire protection measures are necessary. Standard procedure for chemical fires.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Keep unauthorized personnel away. Avoid dust formation. Ensure adequate ventilation. Use personal protection recommended in Section 8. In case of fire: Stop leak if safe to do so.

For non-emergency personnel

Keep unauthorized personnel away.

For emergency responders

Keep unauthorized personnel away. Use personal protection recommended in Section 8.

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6.2. Environmental precautions Avoid runoff to waterways and sewers.

6.3. Methods and material for containment and cleaning up Recover free product. To clean up residue, flush sparingly with water or use an absorbent. Avoid runoff to waterways and sewers. It may be necessary to remove contaminated soil. If product is flammable or combustible, use non-sparking tools. If acidity (low pH) is a problem, neutralize with hydrated lime, soda ash, or sodium bicarbonate. If alkalinity (high pH) is a problem neutralize with dilute acetic acid or dilute hydrochloric (muriatic) acid. If required, notify state and local authorities.

6.4. Reference to other sections See Section 8 for exposure controls and personal protection. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Do not breathe dust. Ensure adequate ventilation. Wear appropriate personal protective clothing to prevent skin contact.

7.2. Conditions for safe storage, including any incompatibilities For industrial use only. Keep container closed when not in use. Provide adequate ventilation when container are open. Keep in a dry, cool and well-ventilated place. Keep out of reach of children.

7.3. Specific end use(s) See Section 1.2.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Boric acid - 10043-35-3

OSHA	Not established
ACGIH	6 mg/m ³
Canada - British Columbia - OEL- STELs	6 mg/m ³
Canada - Ontario - OEL - STEVs	6 mg/m ³ STEL
Canada - Ontario - OEL - TWA EVs	2 mg/m ³

Biological Limit Values No information available

8.2. Exposure controls

Engineering Measures Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Use exhaust ventilation to keep airborne concentrations below exposure limits. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protective equipment

Eye/Face Protection Chemical goggles or face shield with safety glasses. Always wear eye protection when working with chemicals.

Skin and Body Protection Use suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure.

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Hand Protection

For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

Respiratory Protection

In case of inadequate ventilation wear respiratory protection.

Environmental Exposure Controls

Dispose of in accordance with local regulations.

SECTION 9: Physical and chemical properties**9.1. Information on basic physical and chemical properties****Appearance:**

Physical State	Solid Crystalline Granules
Color	White , Lime green , and or Blue
pH	4.0 - 7.0 @ 20 °C
Melting point / Freezing point	Not applicable
Boiling Point / Boiling Range	Not determined
Freezing Point	Not determined
Flash Point	Not determined
Evaporation Rate	Not determined
Flammability	Not determined
Vapor Pressure	Not determined
Relative Vapor Density	Not determined
Density	No data available
Bulk Density	900.0 - 980.67 kg/m ³
Water Solubility	250-320 g/L @20°C
Partition coefficient	No information available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No information available.
Kinematic viscosity	No data available
Oxidizing Properties	Not applicable
Particle Size	No information available
Percent Volatile	Not determined
VOC Content (%)	Not applicable

9.2. Other information**9.2.1. Information with regard to physical hazard classes**

No data available

9.2.2. Other safety characteristics

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity	Stable under normal conditions
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	No specific hazard known
10.4. Conditions to avoid	Extreme temperatures and wet/humid conditions
10.5. Incompatible materials	Strong oxidizing agents

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Sodium hypochlorite
and
Strong alkalis**10.6. Hazardous decomposition products** None known**SECTION 11: Toxicological information****General Information** Users are advised to consider national Occupational Exposure Limits or other equivalent values.**Information on Likely Routes of Exposure**

Inhalation	Avoid inhalation of the product
Skin	Not classifiable
Eyes	Not classifiable
Ingestion	Ingestion is not a likely route of exposure

11.1. Information on toxicological effects**Boric acid**

LD50s and LC50s	2120 mg/m ³ Inhalation LC50 Rat 4 h 2.12 mg/L Inhalation LC50 Rat 4 h
Oral LD50	LD50 - Route: Oral - Species: Rat (Male) > 2600 mg/kg bw - Notes: OECD 401 (UE B.1 Method)
Dermal LD50	LD50 - Route: Dermal - Species: Rabbit > 2000 mg/kg bw - Notes: FIFRA (40 CFR 163)
Group 2A - Probably Carcinogenic to Humans NTP (National Toxicology Program)	Monograph 53 [1991]
Serious eye damage/eye irritation	Male Rat - Not Tested; Female Rat - Not Tested; Male Mice - No Evidence; Female Mice - No Evidence
Skin Sensitization	Not classified.
Reproductive Toxicity	Not classified. Presumed human reproductive toxicant, Category 1B

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Acute Toxicity	Not classified.
Respiratory Sensitization	Not classified.
Serious eye damage/eye irritation	Not classified.
Skin Corrosion/Irritation	Not classified.
Skin Sensitization	Not classified.
Mutagenicity	Not classified.

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Reproductive Toxicity This product contains more than 0.1% of a substance classified as a Reproductive Toxicant (Repr. Tox.). Boric acid. May damage fertility or the unborn child.

Carcinogenicity Not classified.

Specific target organ toxicity Not classified.
- Single exposure

Specific target organ toxicity Not classified.
- Repeated exposure

Mixture versus substance information Mixture

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties No endocrine disruptors present in concentrations $\geq 0.1\%$

11.2.2. Other information Not applicable

SECTION 12: Ecological information

12.1. Toxicity

Boric acid

Aquatic toxicity

Not considered to be harmful to aquatic life

Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 79.7 mg/l - Duration h: 96 - Notes:

Pimephalespromelas (freshwater fish)

Endpoint: LC50 - Species: Fish 74 mg/l - Duration h: 96 - Notes: Dab L.

limanda(marine fish)

Endpoint: LC50 - Species: Aquatic invertebrates - Duration h: 4d - Notes: 64 - 544 mg/L

Endpoint: LC50 - Species: Aquatic invertebrates - Duration h: 48 - Notes: 91 - 165 mg/L

Endpoint: NOEC - Species: Aquatic invertebrates 103 mg/l - Duration h: 4d

Endpoint: EC50 - Species: Algae - Duration h: 72 - Notes: 40.2 - 66 mg/L

Endpoint: NOEC - Species: Algae - Duration h: 72 - Notes: 17.5 - 27.9 mg/L

Endpoint: EC10 - Species: Algae - Duration h: 72 - Notes: 24.5 - 50.7 mg/L

Aquatic chronic toxicity:

Endpoint: NOEC - Species: Fish - Duration h: 32d - Notes: 11.2 - 44.5 mg/L

Endpoint: LOEC - Species: Fish 23 mg/l - Duration h: 32d

Endpoint: NOEC - Species: Fish 6.4 mg/l - Duration h: 34d

Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 42d - Notes: 6.6 - 25.9mg/L

Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 28d - Notes: 16.6 - 43.3mg/L

Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 21d - Notes: 6 - 34.2mg/L

Endpoint: NOEC - Species: Aquatic invertebrates - Duration h: 14d - Notes: 13.8 - 14.3mg/L

Endpoint: NOEC - Species: Aquatic invertebrates 33.1 mg/l - Duration h: 12d

Persistence / Degradability

There is no need to carry out the study if the substance is inorganic.

Bioaccumulative potential:

Not relevant for inorganic substances

Mobility

Soluble in water and permeable through normal soil. - Notes: Log Pow: - 1.09

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WGK Classification (AwSV) (22°C)
315 WGK: 1

12.2. Persistence and degradability No data available

12.3. Bioaccumulative potential No data available

12.4. Mobility in soil No data available

12.5. Results of PBT and vPvB assessment No data available

12.6. Endocrine disrupting properties No endocrine disruptors present in concentrations $\geq 0.1\%$

12.7. Other Adverse Effects None known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal Methods If uncontaminated, recover and reuse as product. If contaminated with other materials, the nature and extend of contamination may require use of specialized disposal methods. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Product residue may remain in empty containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

Mode of Transportation (Road, Water, Air, Rail)

TDG -Canada	Not regulated
DOT	Not regulated
ADR	Not regulated
RID	Not regulated
ADN	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
ICAO	Not regulated

14.1. UN number or ID number None

14.1. UN number None

14.2. UN proper shipping name None

14.3. Transport hazard class(es) None

14.4. Packing group None

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14.5. Environmental hazards No

14.6. Special precautions for user Not applicable

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information**Global Inventories**

Pure substance/mixture Mixture

Chemical Name	CAS Number	Canada (DSL)	Mexico	TSCA: United States
Boric acid	10043-35-3	Y	Y	A

Y: Complies ; A: Active ; - / N: Exempt / Not Listed

EPA**Boric acid**

SARA 302

SARA 304

SARA 313

This material does not contain any components with a section 302 EHS TPQ.

Not Listed

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

CWA (Clean Water Act)

Not regulated

CAA (Clean Air Act)

Not regulated

U.S. State Right-to-Know Regulations

Chemical Name	CAS Number	California Proposition 65	Massachusetts	Minnesota	New Jersey	Pennsylvania
Boric acid	10043-35-3	N	N	N	N	N

Y: Listed ; N: Not Listed

CANADA**WHMIS**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

Boric acid

H360

SECTION 16: Other information**Prepared by**Miller Chemical and Fertilizer, A Huber Company, Global Regulatory Affairs
info@millerchemical.com**Printer ID:**

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1.1.2 NA

Reason for Version

OSHA (Occupational Safety and Health Administration of the US Department of Labor).

Abbreviations and acronyms

OSHA (Occupational Safety and Health Administration of the US Department of Labor)
WHMIS (Workplace Hazardous Materials Information System)
GHS (Globally Harmonized System)
IARC (International Agency for Research on Cancer)
PPE (Personal Protection Equipment)
TWA (Time-Weighted Average)
TLV® (Threshold Limit Value)
STEL (Short Term Exposure Limit)
RQ (Reportable Quantity) (RQ/% in mixture)
DOT (Department of Transportation)
TDG (Transport of Dangerous Goods) Canada
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods)
ICAO (International Civil Aviation Organization)

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet