



SAFETY DATA SHEET

PRODUCT NAME

REGAL SOLUGREEN 13-0-44

Product Code:

NL.2130044REGL_108_01.0_USA

Date of issue:

March 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

REGAL SOLUGREEN 13-0-44

Recommended uses:

Fertilizer end-use, preparation of fertilizers mixtures.

Dry fertilizer for mixing with water for foliar and soil applications.

Restrictions on uses:

None

Manufacturer

REGAL CHEMICAL CO
600 BRANCH DRIVE
ALPHARETTA GA 30004

Company Telephone/Fax

(770)475-4837 / (770)475-1254

Emergency Telephone Number

(800) 424 9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

Classification of the mixture

Classification of the chemical in accordance with 29CFR §1910.1200

Hazard classes and Hazard categories

Hazard statements

Oxidizing solid, Cat. 3

May intensify fire; oxidizer

Toxic to reproduction cat. 1B

May damage fertility or the unborn child.

Label elements

Hazard pictograms



Signal word

DANGER

Hazard Statements

May intensify fire; oxidizer

May damage fertility or the unborn child.

Precautionary Statements

Keep away from heat. Keep away from flammable / combustible / reducing materials.

Take any precaution to avoid mixing with flammable / combustible / reducing materials.

Wear protective gloves / protective clothing / eye protection.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

In case of fire: use any suitable mean for extinguishing surrounding fire. Spray water for small fires. For large fires flood with abundant water.

IF exposed or concerned: Get medical advice/attention.

Store locked up

Dispose of contents/container according to local/state/federal regulations.

Other hazards

None

Classification of the relevant ingredients of the mixture in accordance with 29CFR §1910.1200

Hazard classes and Hazard categories

Potassium nitrate

Oxidizing solid, Cat. 3

Boric acid

Toxic to reproduction, Cat. 1B

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a mixture/preparation

Substance name

CAS No

EC No

Concentration

Potassium nitrate

7757-79-1

231-818-8

50% - 99%

Boric acid

10043-35-3

233-139-2

< 6%



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Perchlorate (ClO_4^-)

< 0.01%

Iodate (IO_3^-)

< 50 ppm

4. FIRST AID MEASURES

Description of first aid measures

General information

If exposed or concerned: Get medical advice/attention.

Never give anything by mouth to an unconscious person or a person with cramps.

In case of inhalation

Remove to fresh air and keep at rest in a position comfortable for breathing.

Get medical attention for any breathing difficulty.

In case of skin contact

Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

In case of eye contact

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

In case of ingestion

Rinse mouth and drink plenty of water. Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

The following symptoms may occur:

| | |
|-------------------------|--|
| In case of inhalation | Irritation to respiratory tract |
| | Delayed lung effects after short term exposure to thermal degradation products |
| In case of skin contact | May cause redness or irritation |
| In case of eye contact | May cause redness or irritation |
| In case of ingestion | Ingestion of large amounts may cause: gastrointestinal disturbances |

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use any suitable mean for extinguishing surrounding fire. Spray water for small fires.
For large fires flood with abundant water.

Unsuitable material: None, but attention should be paid to compatibility with chemicals surrounding.

Specific hazards arising from the chemical

Oxidizer. Contact with combustible materials will not cause spontaneous ignition, however, this product will enhance an existing fire.

Thermal decomposition can lead to the escape of toxic/corrosive gases and vapours.

Thermal decomposition products: Nitrous oxides (NO_x), nitrites, phosphorus oxides, ammonia and metallic oxides.

Protective equipment and precautions for firefighters

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (self contained breathing apparatus (SCBA)).

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Provide adequate ventilation. Wear personal protection equipment (Section 8).

Environmental precautions

Do not allow to enter into surface water or drains. Ensure waste is collected and contained.



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Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal or recovery.

Unsuitable material for containment/taking up:

Do not absorb in saw-dust or other combustible absorbents.

Other information

None

7. HANDLING AND STORAGE

Precautions for Safe Handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid generation of dust. Provide adequate ventilation. Wear personal protective equipment. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Keep away from flammable, combustible, strong acids, strong alkalis and reducing substances.

Conditions for safe storage, including any incompatibilities

Keep/store only in original container. Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Do not store together with:

Flammable substance, reducing agents, strong acids, strong alkalis, empty wood pallets.

Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and Section 15 for more information regarding California State regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Occupational exposure limits

| | Potassium nitrate | Boric acid |
|------------------------------|-------------------|---------------------------------------|
| OSHA | | |
| PEL | Not Established | Not Established |
| STEL/ceiling | Not Established | Not Established |
| ACGIH (2012 TLVs® and BEIs®) | | |
| TWA | Not Established | 2 mg/m ³ (inhal. fraction) |
| STEL/ceiling | Not Established | 6 mg/m ³ (inhal. fraction) |

Engineering controls

Use exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protective Equipment

Eye/face protection

Chemical goggles required all the time.

Skin Protection

Nitrile rubber gloves, over 0.11 mm thickness, > 480 min breakthrough time, recommended. Overall.

Respiratory Protection

Wear respiratory protection, where airborne concentrations are expected to exceed exposure limits

General Hygiene Considerations

Avoid contact with eyes and skin. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|-----------------|---------------------------|
| Appearance | Solid, crystalline powder |
| Colour | Pale blue |
| Odour | Odourless |
| Odour Threshold | No applicable |



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| | |
|--|--------------------------------|
| pH value | No data available |
| Melting point / freezing range | No data available |
| Boiling temperature / boiling range | Not applicable |
| Flash point | Not applicable |
| Vapourisation rate / Evaporation rate | No data available |
| Flammable solids | Not flammable |
| Explosion limits (LEL, UEL) | Not applicable |
| Vapour pressure | Not applicable |
| Vapour density | Not applicable |
| Relative Density | No data available |
| Solubility | > 100 g/L at 20°C/68°F (water) |
| Partition coefficient n-octanol /water | Not applicable |
| Auto Ignition temperature (AIT) | Not applicable |
| Decomposition temperature | No data available |
| Viscosity | Not applicable |
| Explosive properties | Not explosive |
| Oxidising properties | Oxidizer |

Other information

None

10. STABILITY AND REACTIVITY

Reactivity

No hazardous reaction when handled and stored according to provisions.

Chemical stability

Stable under normal storage and temperature conditions.

Possibility of hazardous reactions

None identified

Conditions to avoid

Keep away from flammable, combustible, strong acids, strong alkalis and reducing materials.

Incompatible materials

Flammable, combustible, strong acids, strong alkalis and reducing substances under specific conditions. These incompatible materials shall not include approved packaging materials, pallets, or other dunnage (NFPA 400/2016, Hazardous Materials Code, item 15.3.5.2.1.1).

Hazardous decomposition products

Thermal decomposition products: Nitrous oxides (NO_x), nitrites, phosphorus oxides, ammonia and metallic oxides.

11. TOXICOLOGICAL INFORMATION

The following information mostly refers to the major component of the product.

Likely routes of exposure (inhalation, ingestion, skin and eye contact)

Eye contact, skin contact and inhalation. Exposure by ingestion is not expected to occur through normal industrial or agricultural use.

Symptoms related to the physical, chemical and toxicological characteristics

May be irritant to the respiratory tract. May cause redness or irritation to the skin and eyes. Ingestion of large amounts may cause gastrointestinal disturbances. May cause delayed lung effects after short term exposure to thermal degradation products.

Information on toxicological effects from short and long term exposure

Acute toxicity

| | | |
|---|-----------------|----------------------|
| Acute oral toxicity | LD50: | |
| Acute Toxicity Estimate for the mixture | > 2000 mg/kg bw | (additivity formula) |
| Acute dermal toxicity | LD50: | |



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Acute Toxicity Estimate for the mixture
Acute inhalation toxicity
Acute Toxicity Estimate for the mixture
Assessment / classification:

> 5000 mg/kg pc (additivity formula)
LC50:

Does not contain acutely toxic ingredients/impurities.

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Irritant and corrosive effects

There is no data for the mixture itself.

Irritation to the skin

Result

Method

Main ingredients

non-irritant.

Equivalent/similar to OECD guideline 404

Assessment / classification:

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Irritation to eyes

Result

Method

Main ingredients

non-irritant.

OECD Guideline 405

Assessment / classification:

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Respiratory or skin sensitisation

Skin sensitization

Result

Method

Main ingredients

not sensitizing.

Respiratory sensitisation

No information available.

Assessment / classification:

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Genetic effects

The product does not contain ingredients classified as germ cell mutagens.

Main ingredients

Bacterial (Ames Test)
negative

Chromosomal aberrations
negative

Mutation in mammalian cells
negative

Assessment / classification:

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Reproductive toxicity

Adverse effects on sexual function and fertility/developmental toxicity

OECD guideline 422.

Main ingredients

No adverse effects on fertility/development.

Boric acid fertility

NOAEL (male rats): 17.5 mg B/kg bw/day (Multigeneration study)

Boron has been shown to adversely affect male reproduction in laboratory animals, however, male reproductive effects attributable to boron have not been demonstrated in studies of highly exposed workers.

developmental toxicity

Benchmark dose (BMDL05): 10.3 mg B/kg bw/day

Developmental effects have been observed in laboratory animals. The critical effect is considered to be decreased fetal body weight in rats. There is no evidence of developmental effects in humans attributable to boron in studies of populations with high exposures to boron.

Assessment / classification:

Based on available data for ingredients of the mixture, this product is classified and labelled as **Presumed human reproductive toxicant, Category 1B**, in accordance with Appendix A to 29CFR section 1910.1200.

Specific target organ toxicity (single exposure)

There is no data for the mixture itself.

The product does not contain relevant ingredients classified as Target Organ Toxicant.

Practical experience / human evidence

Main ingredients

No relevant effect have been observed after single exposure to the main ingredients.

No reliable study supports the designation of boric acid as a respiratory irritant.



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Assessment / classification:

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Specific target organ toxicity (repeated exposure)

There is no data for the mixture itself.

The product does not contain relevant ingredients classified as Target Organ Toxicant.

| | Organs affected: | Effects |
|------------------|------------------|--|
| Main ingredients | None | No effects |
| Boric acid | Testes | NOAEL(chronic, rat): 17.5 mg B/kg bw/day |

A number of studies on boric acid or disodium tetraborate decahydrate in diet or via drinking water for periods of 30 days to two years in rats, mice and dogs are available. Most studies support that boron can cause adverse haematological effects and that the main target organ of boron toxicity is the testis. Boric acid is classified and labelled as Presumed human reproductive toxicant, Category 1B, in accordance with Appendix A to 29CFR section 1910.1200.

Assessment / classification:

Based on available data for ingredients of the mixture, this product is classified and labelled as **Presumed human reproductive toxicant, Category 1B**, in accordance with Appendix A to 29CFR section 1910.1200.

Aspiration hazard

Physicochemical data and toxicological information does not indicate an aspiration hazard.

Assessment / classification:

Based on available data, the classification criteria are not met

Carcinogenicity

| | |
|--|--|
| International Agency for Research on Cancer (IARC) | The product does not contain ingredients classified as carcinogens. |
| National Toxicology Program (NTP) | The product does not contain ingredients classified as carcinogens. |
| 29 CFR part 1910, subpart Z | The product does not contain ingredients classified as carcinogens. |
| California Proposition 65 | The product does not contain ingredients classified as carcinogens. |
| WHO (2003) Nitrate in drinking water | No association between nitrate exposure in humans and the risk of cancer |

Assessment / classification:

Based on available data, the classification criteria is not met

Other Toxicological Information

This product contains trace amounts of naturally-occurring perchlorate and iodate. Like other goitrogenic substances, perchlorate may affect iodine uptake by thyroid under specific conditions.

12. ECOLOGICAL INFORMATION

There is no data for the mixture itself. The following information mostly refers to the major component of the product.

Ecotoxicity

Aquatic Toxicity

Toxicity estimate for the mixture (summation method)

| | | |
|--------------|------------|--|
| 96-h L(E)C50 | >100 mg/L | Fish |
| 24-h E(E)C50 | >100 mg/L | <i>Daphnia magna</i> (fresh water flea). |
| 72-h E(E)C50 | > 100 mg/L | Algae |

Assessment / classification

Based on available data for the ingredients of the mixture, the classification criteria are not met.

Persistence and degradability

The product contains mainly inorganic nitrate and phosphate salts. In aqueous solutions, these salts dissociate into their respective ions. Phosphate ions are finally incorporated into the P-cycle. Under anoxic conditions, denitrification occurs and nitrate is ultimately converted into molecular nitrogen as part of the Nitrogen cycle.

Bioaccumulative potential

Low potential for bioaccumulation based on physicochemical properties of main components.

Mobility in soil

The components of this mixture have a low potential for adsorption. Portion not taken up by plants, can leach to groundwater.

Other adverse effects



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Excess nitrate leaching may enrich waters leading to eutrophication.

13. DISPOSAL CONSIDERATIONS

Disposal should be in accordance with applicable federal and state laws.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal method in compliance with applicable regulations.

Waste containing nitrates that exhibit the characteristic of ignitability has the EPA Hazardous Waste Number of D001 according to the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Perchlorate containing product - Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate and Section 15 for more information regarding California State regulations.

14. TRANSPORTATION INFORMATION

US DOT (49CFR part 172)

| | |
|-------------------------|---------------------------------------|
| UN-No. | 1486 |
| UN Proper Shipping Name | POTASSIUM NITRATE MIXTURE |
| Hazard class | 5.1 |
| Packing group | III |
| Hazard label(s) | 5.1 (oxidizer) |
| Special marking | No |
| Special Provision | A1; A29; B120; IB8; IP3; T1; TP33; W1 |

International Maritime Organization (IMDG Code)

| | |
|-------------------------|---------------------------|
| UN-No. | 1486 |
| UN Proper Shipping Name | POTASSIUM NITRATE MIXTURE |
| Hazard class | 5.1 |
| Packing group | III |
| Marine pollutant | No |
| Hazard label(s) | 5.1 (oxidizer) |
| Special marking | No |
| Special Provision | 964; 967 |

Air transport (ICAO-TI / IATA-DGR)

| | |
|-------------------------|-------------------|
| UN-No. | 1486 |
| UN Proper Shipping Name | POTASSIUM NITRATE |
| Hazard class | 5.1 |
| Packing group | III |
| Hazard label(s) | 5.1 (oxidizer) |
| Special marking | No |

Special handling procedure

None

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Other special precautions

None

15. REGULATORY INFORMATION

US Federal

SARA Title III Rules

Section 311/312 Hazard Classes

Acute Health Hazard

No

Chronic Health Hazard

Yes (Toxic to reproduction)



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Fire Hazard

Yes (Oxidizer)

Release of Pressure

No

Reactive Hazard

No

Section 313 Toxic Chemicals

N511 Nitrate compounds (water dissociable; reportable only when in aqueous solution)

Section 302 Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

None ingredient is listed.

DHS - Chemical of Interest (Appendix A to 6CFR Part 27)

Potassium nitrate is listed (ACG)

NFPA 704/2017: National Fire Protection Association

Health 0

Fire 0

Reactivity 0

Special OX

NFPA 400/2016: Hazardous Materials Code

Oxidizer Class 1 (Inorganic Nitrates)

US State Regulations

California Proposition 65

None ingredient is listed.

California Code of Regulations Title 22 (Health & Safety

See <http://www.dtsc.ca.gov/hazardouswaste/perchlorate/>

Canada

This product has been classified according to the hazard criteria of the 2015 Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

Chemical Inventories

United States TSCA

All ingredients are listed

Canada DSL

All ingredients are listed

European Union (EINECS)

All ingredients are listed

Japan (METI)

All ingredients are listed

16. OTHER INFORMATION

This SDS complies with 29 CFR part 1910 subpart Z (2012), Hazardous Products Regulations (HPR, 2015) and ANSI Standard Z400.1-2004

Data source

REACH Registration Dossiers for major components

Prepared by

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Supersedes -

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Indication of changes

Version 1 (March 2023) New document