

Scientific Documentation

SO200, Saccharin Sodium, Dihydrate, Powder, USP

Not appropriate for regulatory submission. Please visit <u>www.spectrumchemical.com</u> or contact Tech Services for the most up-to-date information contained in this information package.

Spectrum Chemical Mfg Corp

769 Jersey Avenue New Brunswick, NJ 08901 Phone 732.214.1300

Ver4.03 15.March.2017



Dear Customer,

Thank you for your interest in Spectrum's quality products and services.

Spectrum has been proudly serving the scientific community for over 45 years. It is our mission to manufacture and distribute fine chemicals and laboratory products with Quality and delivery you can count on every time.

To accomplish our mission, Spectrum utilizes our sourcing leverage and supplier qualification expertise in offering one of the industry's most comprehensive line of fine chemical products under one brand, in packaging configurations designed to meet your research and production requirements. Our product grades include: USP, NF, BP, EP, JP, FCC, ACS, KSA, Reagent grade, as well as DEA controlled substances. We operate facilities in the United States on the East Coast, West Coast, as well as in Shanghai, China in order to provide the best logistical support for our customers.

At Spectrum, Quality is priority number one. Suppliers with the best qualifications are preferred and we employ full-functioning in-house analytical laboratories at each of our facilities. Our facilities and systems are USFDA registered and ISO certified. We frequently host customer audits and cherish opportunities for improvements. Quality is engrained into our culture. Quality is priority number one.

In the following pages, we have designed and prepared documented scientific information to aid you in your initial qualification or your continual use of our products. Please do not hesitate to contact us if further information or the most up-to-date documentation is desired from any of the covered areas.

We appreciate your business and we look forward to hearing from you.

Sincerely,

Alan Wang, MSQA, ASQ CQA Director of Technical Services techservices@spectrumchemical.com

SO200, Saccharin Sodium, Dihydrate, Powder, USP

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| Item Number | <u>SO200</u> |
|-------------------|---|
| Item | Saccharin Sodium, Dihydrate, Powder, USP |
| CAS Number | <u>6155-57-3</u> |
| Molecular Formula | $C_7H_4NNaO_3S.2H_2O$ |
| Molecular Weight | 241.20 |
| MDL Number | |
| Synonyms | 1,2-Benzisothiazol-3(2H)-one 1,1-Dioxide Sodium Salt ; Saccharin Sodium ; Soluble Saccharin |

| Test | Specification | | |
|---------------------------------|---------------|---------|--|
| | Min | Max | |
| ASSAY (ANHYDROUS BASIS) | 99.0 | 101.0 % | |
| CLARITY OF SOLUTION | TO PASS TEST | | |
| COLOR OF SOLUTION | TO PASS TEST | | |
| ACIDITY OR ALKALINITY | TO PASS TEST | | |
| WATER DETERMINATION | | 15.0 % | |
| READILY CARBONIZABLE SUBSTANCES | TO PASS TEST | | |
| HEAVY METALS | | 10 ppm | |
| TOLUENE SULFONAMIDES | TO PASS TEST | | |
| BENZOATE AND SALICYLATE | TO PASS TEST | | |
| IDENTIFICATION | | | |
| RETEST DATE | | | |
| DATE OF MANUFACTURE | | | |
| APPEARANCE | | | |
| RESIDUAL SOLVENTS | TO PASS TEST | | |

Spectrum Chemical Mfg Corp

| Corporate Headquarters: | West Coast Facility: |
|-------------------------|------------------------|
| 769 Jersey Ave. | 14422 S. San Pedro St. |
| New Brunswick, NJ 08901 | Gardena, CA 90248 |
| 732.214.1300 | 310.516.8000 |





SAFETY DATA SHEET

| Preparation Date: 01/29/2015 Product identifier | Revision Date: 1/29/2015 | Revision Number: G1 |
|--|---|---------------------------|
| Product code: Product Name: | SO200 SACCHARIN SODIUM, DIHYDRATE, POWDER, USP | |
| Other means of identification | | |
| Synonyms: | Sodium o-benzosulfimide, dihydrate; Saccharin sodium dihyd saccharide, dihydrate; Sodium saccharinate; Sodium 1,2-benz dioxoide, dihydrate; 1,2-Benzisthiazolin-3-one, 1,1-dioxide; so Saccharin soluble dihydrate | zisothiazolin-3-one, 1,1- |
| CAS #: | 6155-57-3 | |
| RTECS # | DE4375000 | |
| CI#: | Not available | |
| December ded was of the chami | | |
| Recommended use of the chemic | | |
| Recommended use: | Non-nutritive sweetner. | |
| Uses advised against | No information available | |
| Supplier: | Spectrum Chemicals and Laboratory Products, Inc. 14422 South San Pedro St. Gardena, CA 90248 (310) 516-8000 | |
| Order Online At: | https://www.spectrumchemical.com | |
| Emergency telephone number Contact Person: Contact Person: | Chemtrec 1-800-424-9300 Martin LaBenz (West Coast) Ibad Tirmiz (East Coast) | |
| | | |

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Label elements

Not classified

Hazards not otherwise classified (HNOC) Not Applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS-No. | Weight % | Trade Secret |
|-----------------------------|-----------|----------|--------------|
| Sodium Saccharin, dihydrate | 6155-57-3 | 100 | * |
| 6155-57-3 | | | |

4. FIRST AID MEASURES

| First aid measures General Advice: | Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126) |
|---------------------------------------|---|
| Skin Contact: | Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary. |
| Eye Contact: | Flush eye with water for 15 minutes. Get medical attention if irritation occurs. If symptoms persist, call a physician. |
| Inhalation: | Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Ingestion: | Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary. |
| Most important symptoms and effec | ts, both acute and delayed |
| Symptoms | Ingestion may cause nausea, vomiting, and diarrhea. |
| Indication of any immediate medical | attention and special treatment needed |

Indication of any immediate medical attention and special treatment needed
Notes to Physician:
Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

| Suitable Extinguishing Media: | Dry chemical. Water spray mist or foam. |
|--|---|
| Unsuitable Extinguishing Media: | No information available. |
| Specific hazards arising from the chemical | |
| Hazardous Combustion Products: | Carbon oxides, Nitrogen oxides, Sulfur oxides, sodium oxides |
| Specific hazards: | May be combustible at high temperatures. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. |

Special Protective Actions for Firefighters

Specific Methods:

No information available.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protective equipment and emergency procedures | | | |
|---|---|--|--|
| Personal Precautions: | Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Remove all sources of ignition. | | |
| Environmental precautions | Prevent further leakage or spillage if safe to do so. | | |
| Methods and material for conta | ainment and cleaning up | | |
| Methods for containment | Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading. | | |
| Methods for cleaning up | Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. | | |
| | 7. HANDLING AND STORAGE | | |

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. All equipment used when handling the product must be grounded. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

| Components | OSHA | NIOSH | ACGIH | AIHA WHEEL |
|---|------|-------|-------|------------|
| Sodium Saccharin, dihydrate - 6155- 57-3 | | None | None | None |

Canada

| | Components | Alberta | British Columbia | Ontario | Quebec |
|--|------------|---------|------------------|---------|--------|
|--|------------|---------|------------------|---------|--------|

| | None | None | None | None |
|-------------------------------------|------|------|------|------|
| Sodium Saccharin, dihydrate - 6155- | | | | |
| 57-3 | | | | |

Australia and Mexico

| Components | Australia | Mexico |
|-----------------------------|-----------|--------|
| Sodium Saccharin, dihydrate | None | None |
| 6155-57-3 | | |

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

| Eye protection: | Goggles. Safety glasses with side-shields. |
|---------------------------|--|
| Skin and body protection: | Long sleeved clothing. Chemical resistant apron. Gloves. |
| Respiratory protection: | Effective dust mask. Wear respirator with dust filter |
| Hygiene measures: | Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. |

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.

Odor: Odorless.

Molecular/Formula weight: 241.20

Flash Point Tested according to: Not available

Autoignition Temperature (°C/°F): No information available

Boiling point/range(°C/°F): No information available

Density (g/cm3): No information available

Evaporation rate: No information available

Odor threshold (ppm): No information available

Miscibility: No information available

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Granular. Crystals. Powder. Crystalline powder.

Taste No information available

Flash point (°C): No data available

Lower Explosion Limit (%): No information available

pH: No information available

Decomposition temperature(°C/°F): No information available

Bulk density: No information available

Vapor density: No information available

Partition coefficient (n-octanol/water): No information available

Solubility: Soluble in cold water Soluble in hot water Color: White.

Formula: C7H4NNaO3S•2H2O

Flashpoint (°C/°F): No information available.

Upper Explosion Limit (%): No information available

Melting point/range(°C/°F): 228 °C/442 °F

Specific gravity: No information available

Vapor pressure @ 20°C (kPa): No information available

VOC content (g/L): No information available

Viscosity: No information available

10. STABILITY AND REACTIVITY

| Reactivity | | |
|---------------|-----------|--------|
| Reactive with | oxidizing | agents |

| Chemical stability Stability: | Stable at normal conditions |
|-------------------------------------|--|
| Possibility of Hazardous Reactions: | Hazardous polymerization does not occur |
| Conditions to avoid: | Heat. Ignition sources. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Incompatible materials. |
| Incompatible Materials: | Oxidizing agents. |
| Hazardous decomposition products: | Carbon oxides. Nitrogen oxides (NOx). Sulfur oxides. Sodium oxides. |
| Other Information | |
| Corrosivity: | No information available |
| Special Remarks on Corrosivity: | No information available |

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure: Ingestion. Inhalation.

Acute Toxicity

Component Information

Sodium Saccharin, dihydrate - 6155-57-3

LD50/oral/rat = 14200 mg/kg (for anhydrous form CAS no. 128-44-9) LD50/oral/mouse = 17500 mg/kg (for anhydrous form CAS no. 128-44-9) LD50/dermal/rabbit = No information available LD50/dermal/rat = No information available LC50/inhalation/rat = No information available LC50/inhalation/mouse = No information available Other LD50 or LC50information = 500 mg/kg, LDL oral, rabbit (for dihydrate form (CAS no. 6155-57-3) 6 g/kg, LD 50 intraperitoneal, mouse (for anhydrous form (CAS no. 128-44-9) 7100 mg/kg, LD50 intraperitoneal, rat (for anhydrous form (CAS no. 128-44-9)

Product Information

LD50/oral/rat = VALUE- Acute Tox Oral = 14200mg/kg

LD50/oral/mouse = Value - Acute Tox Oral = 17500mg/kg

LD50/dermal/rabbit VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat VALUE-Vapor = No information available VALUE-Gas = No information available VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available VALUE - Gas = No information available VALUE - Dust/Mist = No information available

| Sym | ptoms |
|-----|-------|
|-----|-------|

| Skin Contact: | May cause skin irritation. |
|-------------------------|--|
| Eye Contact: | May cause eye irritation. |
| Inhalation Ingestion | May cause irritation of respiratory tract. Low hazard Health injuries are not known or expected under normal use Ingestion may cause nausea, vomiting, diarrhea |

Aspiration hazard

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| Chronic Toxicity Sensitization: | Prolonged or repeated ingestion may affect the urinary system No information available |
|------------------------------------|--|
| Mutagenic Effects: | No information available |

Carcinogenic effects:

Not classifiable as to its carcinogenicity to humans.

| Components | ACGIH - Carcinogens | IARC | NTP | OSHA HCS - Carcinogens | Australia - Prohibited Carcinogenic Substances | Australia - Notifiable Carcinogenic Substances |
|--------------------------------|------------------------|---------|------------|---------------------------|--|--|
| Sodium Saccharin, dihydrate | Not listed | Group 3 | Not listed | Not listed | Not listed | Not listed |

IARC (International Agency for Research on Cancer)

Group 3 - Not classifiable as to its carcinogenicity to humans

| Reproductive toxicity | No data is available |
|--------------------------------|--------------------------|
| Reproductive Effects: | No information available |
| Developmental Effects: | No information available |
| Teratogenic Effects: | No information available |
| Specific Target Organ Toxicity | |
| STOT - single exposure | No information available |
| STOT - repeated exposure | No information available |
| Target Organs: | No information available |

12. ECOLOGICAL INFORMATION

Ecotoxicity

| Ecotoxicity effects: | No data available. |
|--------------------------------|--------------------------|
| Persistence and degradability: | No information available |
| Bioaccumulative potential: | No information available |
| Mobility: | No information available |

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products: Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Product code: SO200

Product name: SACCHARIN SODIUM, DIHYDRATE, POWDER, USP

| Components | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|-----------------------------|---------------------------|---------------------------|------------------------------|------------------------|
| Sodium Saccharin, dihydrate | None | None | None | None |

14. TRANSPORT INFORMATION

DOT

| UN-No: | Not Regulated |
|-----------------------|--------------------------|
| Proper Shipping Name: | No information available |
| Hazard Class: | No information available |
| Subsidiary Risk: | Not applicable |
| Packing Group: | None |
| ERG No: | No information available |
| Marine Pollutant | No data available |
| DOT RQ (lbs): | No information available |

TDG (Canada)

| UN-No: | Not Regulated |
|-----------------------|--------------------------|
| Proper Shipping Name: | No information available |
| Hazard Class: | No information available |
| Subsidiary Risk: | No information available |
| Packing Group: | No information available |
| Description: | No information available |

ADR

| UN-No: | Not Regulated |
|-----------------------|--------------------------|
| Proper Shipping Name: | No information available |
| Hazard Class: | No information available |
| Packing Group: | No information available |
| Subsidiary Risk: | No information available |
| Classification Code: | No information available |
| Description: | No information available |
| Description: | No information available |
| CEFIC Tremcard No: | No information available |

Not Regulated

No information available No information available

IMO / IMDG

| UN-No: | Not Regulated |
|-----------------------|--------------------------|
| Proper Shipping Name: | No information available |
| Hazard Class: | No information available |
| Subsidiary Risk: | No information available |
| Packing Group: | No information available |
| Description: | No information available |
| IMDG Page: | No information available |
| Marine Pollutant | No information available |
| MFAG: | No information available |
| Maximum Quantity: | No information available |

RID

| UN-No: |
|-----------------------|
| Proper Shipping Name: |
| Hazard Class: |
| Subsidiary Risk: |
| Packing Group: |
| Classification Code: |
| Description: |

| UN-No: Proper Shipping Name: | Not Regulated No information available |
|---------------------------------|---|
| Hazard Class: | No information available |
| Subsidiary Risk: | No information available |
| Packing Group: | No information available |
| Description: | No information available |
| | |

ΙΑΤΑ

| UN-No: | Not Regulated |
|-----------------------|--------------------------|
| Proper Shipping Name: | No information available |
| Hazard Class: | No information available |
| Subsidiary Risk: | No information available |
| Packing Group: | No information available |
| Description: | No information available |

15. REGULATORY INFORMATION

International Inventories

| Components | U.S. TSCA | KOREA KECL | Philippines (PICCS) | Japan ENCS | CHINA | Australia (AICS) | EINECS-No. |
|-----------------------------|---|------------|------------------------|---------------------|-------------|---------------------|-------------|
| Sodium Saccharin, dihydrate | Not Listed; This product is exempt from TSCA 8(b) listing since it is a hydrate. However , the anhydrous form (CAS no.128-44-9) is listed on the TSCA 8(b) Inventory. | | Present | Present (5)- 199 | Not present | Present | Not present |

U.S. Regulations

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity: This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

| Components | Carcinogen | Developmental Toxicity | | Female Reproductive Toxicity: |
|-----------------------------|------------|------------------------|------------|----------------------------------|
| Sodium Saccharin, dihydrate | Not Listed | Not Listed | Not Listed | Not Listed |

CERCLA/SARA

| Components | CERCLA - Hazardous Substances and their Reportable Quantities | | Hazardous | Chemical Category | Section 313 - Reporting de minimis |
|--------------------------------|---|------|-----------|--------------------------|---------------------------------------|
| Sodium Saccharin, dihydrate | None | None | None | None | None |

U.S. TSCA

| • | TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) | TSCA 8(d) -Health and Safety Reporting |
|-----------------------------|--|--|
| Sodium Saccharin, dihydrate | Not Applicable | Not Applicable |

Canada

WHMIS hazard class:

Non-controlled

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

| Components | Canada (DSL) | Canada (NDSL) |
|-----------------------------|--------------|---------------|
| Sodium Saccharin, dihydrate | Not Listed | Not Listed |

| Components | | CEPA - 2010 Greenhouse Gases Subject to Manditory Reporting |
|-----------------------------|------------|--|
| Sodium Saccharin, dihydrate | Not listed | Not listed |

EU Classification

R-phrase(s)

not determined none

S -phrase(s)

none

| Components | Classification | Concentration Limits: | Safety Phrases |
|-----------------------------|----------------|-----------------------|----------------|
| Sodium Saccharin, dihydrate | | No information | |

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger: None. Not dangerous

16. OTHER INFORMATION

16. OTHER INFORMATION

01/29/2015

1/29/2015

Sonia Owen

Preparation Date: Revision Date: Prepared by:

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet



Manufacturer

Product Covered: SO200, Saccharin Sodium, Dihydrate, Powder, USP

Spectrum takes ownership as the manufacturer for the Spectrum product listed above and provides full quality assurance, customer service, and technical product support.

While information concerning the raw material manufacturer of our starting materials is considered proprietary, such information can be made available upon request contingent on demonstration of business volume justification and successful execution of confidential disclosure agreement (CDA).

Requests for disclosure of proprietary raw material manufacturer information may be submitted to the assigned account representative for consideration.

Sincerely,

Alan Wang, MSQA, ASQ CQA Director of Technical Services techservices@spectrumchemical.com

Certificate of Registration



This is to certify that the quality management system of

Spectrum Chemicals and Laboratory Products, Frc

Main Site: 14422 South San Pedro Street, Gardena, California, 90248, USA

Additional Sites: 13915 South Main Street, Los Angeles, California, 90061, USA 755 Jersey Avenue, New Brunswick, New Jersey, 08901, USA 769 Jersey Avenue, New Brunswick, New Jersey, 08901, USA 7400 North Oracle Road, Suite 221, Tucson, Arizona, 85704, USA

has been assessed and registered by Intertek as conforming to the requirements of

ISO 9001:2008

The quality management system is applicable to

California and New Jersey sites: The manufacture and distribution of specialty fine chemicals, solutions, equipment, supplies and products for the laboratory, pharmaceutical, food, healthcare, cosmetic, fragrance, biotechnology, environmental and process industries.

Arizona site: Supporting Spectrum's two manufacturing facilitates by: selecting and gualifying distributors of Laboratory and Safety Equipment; processing bids and quotes to generate new sales opportunities; sourcing bulk chemicals in support of bulk bids and guotes; assisting production operations through order expediting and IT infrastructure support.

Certificate Number: 94-316m-01 Initial Certification Date: 27 December 1994 Certificate Issue Date: Certificate Expiry Date:

29 January 2016 14 September 2018

Calin Moldovean, President

Intertek Testing Services NA, Inc.

900 Chelmsford Street, Suite 301-3, Lowell, MA, USA



CERTIFICATION



Intertek Intertek

In the issuance of this certificate, Intertek assumes no liability to any party other than to the Client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at certificate.validation@intertek.com or by scanning the code to the right with a smartphone.

Certificate of Registration



This is to certify that the quality management system of

Spectrum China Ltd.

Building A20, No. 3802, Shengang Road, Songjiang District, Shanghai, China

has been assessed and registered by Intertek as conforming to the requirements of

ISO 9001: 2008

The quality management system is applicable to:

Provision of service of purchase, testing and sales for chemical products, repacking of non-hazardous chemical products.

Organization Code: Certificate Number: Certificate Issue Date: Certificate Expiry Date: 77762704-8 111310001-01 17 November 2015 14 September 2018



014

Authorised Signature: Calin Moldovean – President, Business Assurance Intertek Certification Limited, 10A Victory Park, Victory Road, Derby DE24 8ZF, United Kingdom Intertek Certification Limited is a UKAS accredited body under schedule of accreditation no. 014.

In the issuance of this certificate, Intertek assumes no liability to any party other than to the client, and then only in accordance with the agreed upon Certification Agreement. This certificate's validity is subject to the organization maintaining their system in accordance with Intertek's requirements for systems certification. Validity may be confirmed via email at <u>certificate.validation@intertek.com</u> or by scanning the code to the right with a smartphone. The annual validity of the certificate a also be checked through the website <u>http://www.cnca.gov.cn</u> of CNCA in China.



The certificate remains the property of Intertek, to whom it must be returned upon request.



December 20, 2016

Certificate of cGMP

Dear Valued Customer:

Spectrum Chemicals and Laboratory Products certify that our USP, NF, FCC, EP, BP, JP, and food grade products are produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

Spectrum is an FDA registered and inspected drug establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

Spectrum – Gardena, California:2020632Spectrum – New Brunswick, New Jersey:2246824Spectrum – Shanghai, China:3006174778

Thank you for your interest with Spectrum products. Please feel free to contact the Quality Assurance department at 310-516-8000 or via email at <u>qualityassurance@spectrumchemical.com</u> if we may be of further assistance

Sincerely,

Howard Lan

Howard Lau, Quality Assurance Specialist

CORPORATE HEADQUARTERS

769 Jersey Avenue New Brunswick, NJ 08901 PHONE 732.214.1300 FAX 732.246.7132

WEST COAST FACILITY

14422 South San Pedro Street Gardena, California 90248 PHONE 310.516.8000 FAX 310.516.9843



September 19, 2016

Certificate of cGMP

Dear Valued Customer:

Spectrum Chemicals and Laboratory Products certify that the following product(s) is produced, processed, packaged and held in compliance with current Good Manufacturing Practices (cGMP) in accordance with the applicable parts of 21 CFR, parts 210 and 211 of the Code of Federal Regulations.

| Catalog Number | Product Name | |
|----------------|--|--|
| SO200 | Saccharin Sodium, Dihydrate, Powder, USP | |

Spectrum is an FDA registered and inspected drug establishment. Our United States Food and Drug Administration (USFDA) Registration numbers are as follows:

<u>2020632</u> <u>2246824</u> 3006174778

| Spectrum-Gardena, CA: |
|-----------------------------|
| Spectrum-New Brunswick, NJ: |
| Spectrum-Shanghai, China: |

Thank you for your interest with Spectrum products. Please feel free to contact the Quality Assurance department at 310-516-8000 or via email at <u>qualityassurance@spectrumchemical.com</u> if we may be of further assistance.

Sincerely,

Order Many

Oralia Chavez Quality Assurance Specialist



April 14, 2016

Re: Saccharin Sodium, Dihydrate, Powder, USP- SO200

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfr. Corp. understand the concern regarding Bovine Spongiform Encephalopathy (BSE). Please be assured that the chemical

Saccharin Sodium, Dihydrate, Powder, USP- SO200

is BSE/TSE free.

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at <u>techservices@spectrumchemical.com</u>.

Sincerely,

Darlene Dagdag-Lyudmirskiy Technical Services Spectrum Chemical Mfr. Corp.

This document has been produced electronically and is valid without a signature

April 14, 2016



Re: Saccharin Sodium, Dihydrate, Powder, USP-SO200

To Whom It May Concern:

Thank you for your interest in Spectrum high quality chemicals.

We at Spectrum Chemical Mfr. Corp. understand the concern regarding the presence of allergens in raw materials. Please be assured that the following chemical does not contain (Milk and Milk derivatives, Egg, Fish, Crustacean/Shellfish, Tree Nuts, Wheat, Peanut, Soybeans, Soya and derivatives, Cereals containing Gluten, Corn starch, Wheat starch, Potato Starch, Mustard, Celery, Sulfite at concentrations of at least 10 mg/Kg (ppm), Anti caking and firming agents: E514, E518, E535, E536, etc, BHA/ BHT-E320/ E321 and other antioxidants, Caffeine, Cinnamon, Cocoa and Cocoa derivatives, Colophonium/ Colophonyl/ Rosin, Colors, Emulsifiers, Stabilizers and Thickeners, and Sesame Seed).

Saccharin Sodium, Dihydrate, Powder, USP-SO200

If you have any further questions, please contact Tech Services at (310) 516-8000 Extension 5471, or by email at <u>techservices@spectrumchemical.com</u>.

Sincerely,

Darlene Dagdag-Lyudmirskiy Technical Services Spectrum Chemical Mfr. Corp.

This document has been produced electronically and is valid without a signature



Label Information

The Spectrum label presents technical and safety information in an easily understood format. Our technical specialists stay abreast of the latest requirements of the Globally Harmonized System for Classification and Labelling of Chemicals (GHS), as well as the Occupational Safety and Health Administration (OSHA), the Food and Drug Administration (FDA) and other government regulatory agencies in order to ensure compliance, accuracy and concise hazard communication.

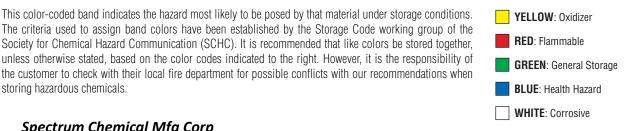
| been evaluate criteria and is hazardous. All cunknown haza unknown haza unknown haza unknown haza used with caul protection an methods consider workplace safet SDS for addition precautions. If occurs seek me KEEP FRO | d per GHS/OSHA s not classified as chemicals may pose trds and must be tion. Use personal d safe handling istent with proper y practices. Consult onal properties and f adverse reaction | Bereinsen (1990) Bere | C7H4NNaO3S•2H2O- F.W. 241.20 Assay (Anhydrous Basis) 99.0-101.0% Clarity of Solution To pass test Color of Solution To pass test Acidity or Alkalinity To pass test Acidity or Alkalinity To pass test MAXIMUM LIMITS Maximum LIMITS Water 15.0% Readily Carbonizable Substances To pass test Heavy Metals 001% Toluenesulfonamides To pass test Berzoate and Salicylate To pass test Residual Solvents To pass test Wating: This product contains a chemical known to the State California to cause cancer. WARNING: This product contains a chemical known to the State California to cause birth defects or other reproductive harm. G 11/E1GHS A Lot No. 0622233 90248 • New Brunswick, NJ 08901 100 |
|--|---|---|--|
| | | di conr. Gaidella, CA | SO240 • New Drunswick, NJ 00501 |

- A Bar Code
- GHS Hazard Pictograms
- Warning, Safety Data and Precautionary Information
- Product Catalog Number
- Item Name, Form, Grade

storing hazardous chemicals.

Storage Color Band

- Size/Quantity
- Chemical Abstracts Service (CAS) Registry Number
- Caution Information
- DOT Shipping Information
- J Toll-Free 24-Hour Chemical **Emergency Telephone Number**
- C Empirical Formula, Formula Weight and Technical Specifications Panel
- Expiration Information
- Lot Number
- Kosher Certified by Kosher Supervision of America (KSA).



Spectrum Chemical Mfg Corp

Corporate Headquarters: 769 Jersey Ave. New Brunswick, NJ 08901

West Coast Facility: 14422 S. San Pedro St. Gardena, CA 90248

732.214.1300

310.516.8000

Spectrum®

Certificate Of Analysis

| Item Number | SO200 | Lot Number | 1FA0548 |
|-------------------|--|------------------|---------|
| Item | Saccharin Sodium, Dihydrate, Powder, USP | | |
| CAS Number | 6155-57-3 | | |
| Molecular Formula | $C_7H_4NNaO_3S.2H_2O$ | Molecular Weight | 241.20 |

| Test | Speci | Specification | |
|---------------------------------|----------------|---------------|--------------------------------|
| | min | max | |
| ASSAY ($C_7H_4NNaO_3S$) | 99.0 - 101.0 % | | 99.88 % |
| CLARITY OF SOLUTION | TO PASS TEST | | PASSES TEST |
| COLOR OF SOLUTION | TO PASS TEST | | PASSES TEST |
| ACIDITY OR ALKALINITY | TO PASS TEST | | PASSES TEST |
| WATER | | 15.0 % | 14.28 % |
| READILY CARBONIZABLE SUBSTANCES | TO PASS TEST | | PASSES TEST |
| HEAVY METALS | | 0.001 % | <0.001 % |
| TOLUENE SULFONAMIDES | TO PASS TEST | | PASSES TEST |
| BENZOATE AND SALICYLATE | TO PASS TEST | | PASSES TEST |
| IDENTIFICATION A | TO PASS TEST | | PASSES TEST |
| IDENTIFICATION B | TO PASS TEST | | PASSES TEST |
| IDENTIFICATION C | TO PASS TEST | | PASSES TEST |
| RETEST DATE | | | 03-JUL-2018 |
| RESIDUAL SOLVENTS | TO PASS TEST | | NO RESIDUAL SOLVENTS USED |
| APPEARANCE | | | WHITE CRYSTALLINE POWDER |
| MANUFACTURE DATE | | | 04-JUL-2013 |

Spectrum Chemical Mfg Corp 14422 South San Pedro Street Gardena 90248 CA



Certificate of Analysis Results Certified By:

Adan Hernandez Quality Control Manager Spectrum Chemicals & Laboratory Products

All pharmaceutical ingredients are tested using current edition of applicable pharmacopeia.

Read and understand label and MSDS/SDS before handling any chemicals. All Spectrum's chemicals are for manufacturing, processing, repacking or research purposes by experienced personal only. The customer must ensure to provide its users adequate hazardous material training and appropriate protective gears before handling our chemicals.

Spectrum®

Certificate Of Analysis

| Item Number | SO200 | Lot Number | 1EL0139 |
|-------------------|--|------------------|---------|
| Item | Saccharin Sodium, Dihydrate, Powder, USP | | |
| CAS Number | 6155-57-3 | | |
| Molecular Formula | $C_7H_4NNaO_3S.2H_2O$ | Molecular Weight | 241.20 |

| Test | Speci | Specification | |
|---|----------------|---------------|--------------------------------|
| | min | max | |
| ASSAY (C ₇ H ₄ NNaO ₃ S) | 99.0 - 101.0 % | | 99.88 % |
| CLARITY OF SOLUTION | TO PASS TEST | | PASSES TEST |
| COLOR OF SOLUTION | TO PASS TEST | | PASSES TEST |
| ACIDITY OR ALKALINITY | TO PASS TEST | | PASSES TEST |
| WATER | | 15.0 % | 14.28 % |
| READILY CARBONIZABLE SUBSTANCES | TO PASS TEST | | PASSES TEST |
| HEAVY METALS | | 0.001 % | <0.001 % |
| TOLUENE SULFONAMIDES | TO PASS TEST | | PASSES TEST |
| BENZOATE AND SALICYLATE | TO PASS TEST | | PASSES TEST |
| IDENTIFICATION A | TO PASS TEST | | PASSES TEST |
| IDENTIFICATION B | TO PASS TEST | | PASSES TEST |
| IDENTIFICATION C | TO PASS TEST | | PASSES TEST |
| RETEST DATE | | | 03-JUL-2018 |
| RESIDUAL SOLVENTS | TO PASS TEST | | NO RESIDUAL SOLVENTS USED |
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January 26, 2016

RE: Lot Numbering System

Dear Valued Customer:

This letter is to inform you of Spectrum Chemicals and Laboratory Products' Lot Numbering System. The system is based on an alpha-numerical sequence which provides the month, year and location of production.

The lot numbering system utilized until 2010 is a sequence of **six characters**, two letters followed by four numbers. The first letter represents the year, for example, Y denotes 2009 and Z denotes 2010. The second letter represents the month and site, for example, A-L denotes January through December at Spectrum's Gardena, CA facility, while M-X denotes January through December at the New Brunswick, NJ facility. The following four numbers are sequentially assigned.

Example: ZI0928 = The 928th material produced in California in September 2010

The lot numbering system utilized for 2011 and forward, is a sequence of **seven characters**. The first character, a number, represents the production facility:

1 = Gardena, CA Facility 2 = New Brunswick, NJ Facility 3 = China Facility

The second character, a letter, represents the year. For example, A denotes 2011 and B denotes 2012. The third character, a letter, represents the month, with A denoting January and L denoting December. The following four numbers are sequentially assigned.

Example: 2AA0706 = The 706th material produced in New Jersey in January 2011

Thank you for your interest with Spectrum products. Please feel free to contact us at 310-516-8000 or via email at <u>qualityassurance@spectrumchemical.com</u> if we may be of further assistance.

Sincerely,

1 lan

Michael Dang Manager, GMP Compliance



Stability – Shelf Life Guidance

Product Covered: SO200, Saccharin Sodium, Dihydrate, Powder, USP

Spectrum Chemical's manufacturing partner has assigned the following shelf life guidance for the product listed above.

The product, SO200, Saccharin Sodium, Dihydrate, Powder, USP, is assigned a 60 months shelf life from date of manufacturing. The quality and integrity of the chemical depends on the handling and storage conditions. Please refer to the Safety Data Sheet for proper storage and handling procedures.

Adan R. Hernandez Quality Control Manager

Dan & Ilan (

Corporate Headquarters 769 Jersey Avenue New Brunswick, NJ 08901-3605