



Back To Your Roots Soil Solutions High Brix Manufacturing

Organic Paperwork for Verification 2024

Diverse-A-Tea

March 1, 2024

To Whom it Concerns

Diversity-A-Tea Brewing Services is an independently owned company that contracts and provides the service of brewing microbial tea.

The process of brewing is a well studied and systematic process to remove and extract microbes from sources, incubate and proliferate microbial life in a water solution. End use includes acceleration of compost production, application to forages, plants and soil. Dr. Elaine Ingham has done extensive research on the making and the use of compost teas, "Teaming with Microbes" is an excellent resource for individuals that are looking for additional information about this practice of brewing, uses and ingredients.

The brewing process used by Diverse-a-Tea Brewers starts with water treated with 5 mechanical processes to aerate, heat, and energize prior to the brewing. The aeration process includes the use of atmospheric air to reach the aeration point identifier for best brewing conditions based on temperature, microbe populations, etc. Following the aeration processes, the water is transferred to the brewing tank. Products identified by the contractor are added at this point. This is brewed using forced atmospheric air for a period of 24 hours. At the end of the brewing process, the tea is strained, stabilized to a pH of approximately 4.0 with citric acid and transferred to plastic totes.

Cleaning of the equipment occurs following each batch with the use of peroxide to clean and disinfect and a double rinse with clean water.

The contract used for this service is included in this package, along with a disclaimer form, and an information sheet about what ingredients can be used to establish bacterial or fungal dominant teas.

The brewer does have access to several different brewing ingredients used in the brewing process. Paperwork needed to substantiate organic use will need to be verified by the producer with their own certifier. These papers will be made available upon request.

Sincerely,

Greg Moline, Owner of Diverse-A-Tea Brewing Services.

Diverse-A-Tea Brewing Services Inc.

25147 TWP 490 Leduc County, AB T4X 2N4 **Phone: 780-690-5130**

No: 2000

Sold To:	Deliv	er To:	
	Date	Required:	
containers acc I agree that I v Microbx Organic Other s	request Diverse-A-Tea Brewers Inc. to brew rethe end use of the microbial tea. This will include proper dispost ording to any provincial and federal requirements. vill supply the ingredients for the tea outlined below: vial Tea Starter - includes starter product, molasses and phosphore c Verified Microbial Tea Starter - ingredient list and organic supportanter products listed below:	sal of all unused tea and	l storage
<i>QUANTITY</i>	DESCRIPTION	UNIT COST	AMOUNT
1 1	#1 - 1,000 litre tote (264 US gallons) *(Organic Verified)	\$650.00	\$650.00
1	Refundable deposit for tote	\$125.00	\$125.00
1	Shipping and handling per tote	\$170.00	\$170.00
	Subtotal		\$945.00
	GST - 5%		\$47.25
	TOTAL		\$992.25
	Bulk shipments are available upon request er assumes all risk of use, storage and handling of this material. Neither seller ning this product, except in conformity with statements on the contract.	or its agent makes any warra	anty, expressed or
Salesperson S	ignature:	Date:	
Customer Sig	nature:		

Diverse-A-Tea Brewing Services

Date:	Contract Number 2000
Customer Name:	
Address:	
	ing service for the Microbial Tea. Please sign this document and ecords and return the top copies with your payment.
_	tely owned company that provides only the service of brewing ed process to aerate and brew tea and then stabilize the
remaining product or containers. Please	nts of the product, use of the product, nor for the disposal of any e refer to your local, municipal, and provincial guidelines for ents requested and provided by our customers.
included in the tea. Customers requiring ingredients prior to ordering the service	bial tea, our customers must identify what ingredients they want g organic tea must identify any protocols for cleaning or e. Use of Phosphoric acid is required to stabilize the tea after information about ingredients often used in microbial tea.
I have read and understand the above ir	nformation:
Customer Signature:	Date:
Customer Printed Name:	
For more information about compose	st teas, microbial teas, or microbes of the soil, please refer

to the following resources:

Teaming with Microbes

Authors: Jeff Lowenfels and Wayne Lewis, with foreword by Dr. Elaine Ingham.

Adding Biology

Author: Dr. Elaine Ingham and Carole Ann Rollins

Compost Tea Brewing Manual 5th Ed. Elaine Ingham

Soil Biology Primer

Authors: Dr. Elaine Ingham, Andrew R. Moldenke & Clive A. Edwards





Back To Your Roots Soil Solutions High Brix Manufacturing

Organic Paperwork for Verification 2024

Verified Tea Starter Ingredient List:

Worm Castings
Molasses
Humic Acid
Micronized Soft Rock
Organic Gem Liquid Fish Fertilizer
Citric Acid

INPUTS VERIFICATION SERVICE

Nº 219688-20231221-2111



Earthly Matters

1302 15th Avenue T1M 1K7 Coaldale Alberta - Canada

RESULT OF THE DOCUMENTARY EVALUATION

According to Canadian Organic Standards*

Issued: 21 December 2023 Expires: 24 March 2025

Ecocert Canada has reviewed the declared formulae for the products listed below against the National Standard of Canada on Organic Production Systems and Permitted Substances Lists (CAN/CGSB 32.310, CAN/CGSB 32.311 and CAN/CGSB 32.312).

Ecocert Canada has verified that all the declared ingredients appear on the Permitted Substances Lists (CAN/CGSB-32.311) applicable sections and are compliant with any restrictions regarding their production and composition.

Ecocert Canada has also verified that the declared processes used in the manufacture of this/ these products and its/ their ingredients are compliant with section 1.4, 1.5 and section 6.4.4 of CAN/CGSB-32.310.

When restrictions apply regarding the use of such substances, they are indicated in the table in annex.

We remind you **no reference to Ecocert Canada is allowed**

This document is valid until its expiration date. A new evaluation is required every year.

Organic operators must check with the certifier before using any input.

^{*}pursuant to the standards CAN/CSGB 32.310 - General Principles and Management Standards, the CAN/CSGB 32.311 - Permitted Substances Lists and CAN/CGSB 32.312-Aquaculture – General principles, management standards and permitted substances lists.

INPUTS VERIFICATION SERVICE

Nº 219688-20231221-2111



Earthly Matters

1302 15th Avenue T1M 1K7 Coaldale Alberta - Canada

ANNEX

Issued: 21 December 2023 Expires: 24 March 2025

Inputs reviewed according to Canadian Organic Standards* Inputs reviewed for the trademark: Earthly Matters

INPUT(S)	APPLICABLE SECTION	RESTRICTION
> Worm Castings	32.311_4.2 - Substances for crop production, Column 1 -Soil Amendements	

^{*}pursuant to the standards CAN/CSGB 32.310 - General Principles and Management Standards, the CAN/CSGB 32.311 - Permitted Substances Lists and CAN/CGSB 32.312-Aquaculture – General principles, management standards and permitted substances lists.

This annex is not valid without the evaluation letter to Earthly Matters, dated 21 December 2023.

Organic operators must check with the certifier before using any input.



Organic Certificate

Certified Operation: Buffalo Molasses, LLC

Mailing Address: PO Box 74

E Aurora, NY, 14052

Category: Handler

Certificate #: 2125801

Site Address: Buffalo Molasses, LLC: 1830 Perry Road, N. Java, NY, 14113, USA

(See addendum for details)

Certified to the USDA organic regulations, 7 CFR Part 205. Once certified a production or handling operation's organic certification continues in effect until surrendered, suspended, or revoked.

Effective Date: 10/11/2021 Issue Date: 11/03/2023

Anniversary Date: 06/01/2024

Vinodthan Nayagar Director of Organic Divisions Certified Operation: Buffalo Molasses, LLC

Mailing Address: PO Box 74

E Aurora, NY, 14052

Category: Handler

PRODUCTS CERTIFIED

PRODUCTS	ID MARK	STANDARD	EFFECTIVE DATE
Organic:			
Molasses 72 DM	N/A	NOP;US-CANADA*	10/11/2021

*Certified in accordance with the terms of the US-CANADA Organic Equivalency Arrangement

Effective Date: 10/11/2021 Issue Date: 11/03/2023

Anniversary Date: 06/01/2024

Vinodthan Nayagar Director of Organic Divisions



Attestation Number: 8029-INP-24
Initial Effective Date: 21-Mar-2022
Attestation Expiry Date: 31-Mar-2025

Attestation of Input Compliance

This attestation is based on the compliance of products which are approved for use in organic production, at the discretion of the operator's certification body, with the national organic standards of Canada CAN/CGSB-32.310 and 32.311.

This attestation expires on the date noted above or until it is suspended or cancelled by the Centre for Systems Integration.

High Brix Manufacturing Inc.

25147 Township Road 490 Leduc County, AB, T4X 2N4, Canada.

This attestation confirms the compliance of the products as per the attached list.

Input Supplier #: 8029-INP

Centre for Systems Integration
31-Mar-2024

Signature of CSI Representative

Issue Date

Version Date: February 18, 2021

Certification Body:

The Centre for Systems Integration (CSI)* 85 Albert Street, Suite 1100 Ottawa, Ontario, Canada K1P 6A4 1-800-516-3300



Input Supplier: High Brix Manufacturing Inc.

Input Supplier Number: 8029-INP

Attestation Number: 8029-INP-24

Issue Date: 31-Mar-2024

LIST OF PRODUCTS APPROVED FOR USE IN ORGANIC PRODUCTION

An operator intending to use any product listed below as approved for use in organic production under the Canadian organic standards, CAN/CGSB-32.310 and CAN/CGSB-32.311, must verify with their certification body that the product is acceptable for use prior to incorporation into the organic system plan.

PRODUCT	Intended use (CF=crop fertility; CP=crop protection; LF=Livestock feed; LH=Livestock healthcare; P=Processing input)	BRAND NAME	RESTRICTIONS
Ful-Humix	CF	BIOAG	Shall not cause a build-up of heavy metals or micronutrients in soil.
Ful-Humix L	CF	BIOAG	Shall not cause a build-up of heavy metals or micronutrients in soil.
Ful-Power	CF	BIOAG	Shall not cause a build-up of heavy metals or micronutrients in soil.
Miicronized Soft Rock Phosphate	CF	High Brix Manufacturing	
Zumsil	CF	High Brix Manufacturing /Terra Tech	To be used when soil and plant silica deficiencies are documented by visual symptoms or by testing of soil and/or plant tissue, or when the need for a preventative application can be documented.
GSR Calcium Genesis Soil Rite Dormant Mix	CF	Soil Works	
GSR Calcium Genesis Soil Rite Growing Mix	CF	Soil Works	

REPORT NO. C20323-70014

A & L Canada Laboratories Inc.

ACCOUNT NUMBER 95000 2136 Jetstream Road, London, ON, N5V 3P5 Tel: (519) 457-2575 Fax: (519) 457-2664



TO:BACK TO YOUR ROOTS SOLUTIONS BOX 1236 SHELLBROOK, SK S0J 2E0

Phone:519-457-2575

CERTIFICATE OF ANALYSIS

PAGE: 1 / 2

PROJECT NO:
PO#:
LAB NUMBER:3237026
SAMPLE ID:ROCK PHOSPHATE

SAMPLE MATRIX:SOLID DATE SAMPLED:NONE GIVEN DATE RECEIVED:2020-11-18 DATE REPORTED: DATE PRINTED:2020-11-25

PARAMETER	RESULT	UNIT	DETECTION LIMIT	METHOD REFERENCE
Arsenic	21	ug/g	1	EPA 3050B/6010B(mod) *
Total Phosphorus (as P205)	22.49	%	0.05	ICP
Cadmium	1.20	ug/g	0.50	EPA 3050B/6010B(mod) *
Chromium	86.40	ug/g	1.00	EPA 3050B/6010 (mod) *
Cobalt	2.92	ug/g	1.00	EPA 3050B/6010 (mod) *
Copper	42.30	ug/g	1.00	EPA 3050B/6010 (mod)*
Lead	7	ug/g	1	EPA 3050B/6010B(mod) *
Mercury	0.1	ug/g	0.1	EPA 7471 *
Molybdenum	19.1	ug/g	1.0	EPA 3050B/6010 (mod)*
Nickel	64.20	ug/g	1.00	EPA 3050B/6010 (mod) *
Selenium	BDL	ug/g	1.00	EPA 3050B/6010 (mod) *
Vanadium	38.67	ug/g	1.00	EPA 3050/6010 (mod)*
Zinc	111.40	ug/g	1.00	EPA 3050B/6010 (mod)*

Comment:

Results reported on a dry weight basis

* - accredited test

BDL - Below detectable levels

The results of this report relate to the sample submitted and analyzed.

C20323-70014

Results Authorized By:

Jug

Haifeng Song, Ph.D., C.Chem. Lab Director

MATERIAL SAFETY DATA SHEET

Micronized Soft Rock

EMERGENCY CALL 911 or CANUTEC: 1-(613) 996-6666 or * 666 on cell phones

Section 1: Product Information

Manufacturers name and Address:

High Brix Manufacturing Inc.

25147 TWP 490

Leduc County, Alberta, T4X 2N4

Trade Name: Micronized Soft Rock

Synonyms: Phosphate Rock (minerals rock); apatite rock deposit; soft rock phosphate; organic rock phosphate.

In case of emergency call 911 or Canutec: 1 (613) 996-6666 or *666 on your cell phone

2. Hazardous Ingredients

Component CAS No. % Exposure Limits Hazard

Not Applicable

-Boiling Point: N/A

-Vapour Pressure: N/A

-Freezing Point: Decomposes

3. Physical Data

-Vapour Density: N/A

-Evaporation Rate: N/A

-Appearance and Odour: Brown powdered rock

4. Fire and Explosion Hazard Data

Flammable Limits in air(upper):No Data

Flash Point (Degrees F):

Flammable Limits in air(lower):No Data

Means of extinction: Use water, CO2, dry chemical

foam

Unusual Fire and Explosion Hazards: Avoid production in a dusty area where there is electrical or local burning.

5. Reactivity Data

Stability: Very Stable when dry

Conditions of reactivity: Temperatures in excess of 150 degrees C.

Materials to avoid: Bases and Hypochlorite's

Hazardous Decomposition Products: Ammonia, Carbon Monoxide, Cyanuric Acid and sulphur dioxide.

6. Toxicology Properties

Avoid contact with eyes, mouth or excess dust in ear cavities. May also cause irritation to skin upon contact. Also can cause lung damage, if dust is consumed on a regular basis due to the silica content.

Carcinogenicity: None of the materials are carcinogens.

7. Preventive Measures

Control measures: Ventilate to control dust.

Respiratory Protection: A NIOSH or MSHA approved respirator should be worn when dust levels exceed

15 mg/m3

Protective Clothing: Normal clothing or coveralls, rubber gloves. **Eye Protection:** Wear Safety glasses or goggles to avoid eye contact.

Spill or Leak Precautions: Sweep, shovel or vacuum into sealable waste containers. Flush area with plenty of water. Prevent contamination of sewers, streams, lakes, ponds and domestic waterways. **Waste Disposal:** Dispose of in accordance with local, provincial and federal regulations. Return

recovered material to manufacturer for recycling or reprocessing.

Storage and Handling Precautions: Keep out of reach of children. Store in a dry place. Do not store with

seeds or foodstuffs. Avoid direct and prolonged contact with skin.

8. First Aid Measures

Primary Route of Exposure: Skin or eye contact, inhalation.

If inhaled: Move victim to fresh air.

In case of eye contact: Flush immediately with large amounts of water for 15 minutes. Seek attention if irradiation persists.

In case of skin contact: Wash with soap and water. Flush affected areas with large amount of cold water. Contaminated clothing should be washed.

If Swallowed: Signs and symptoms: Excess ingestions must occur before any health hazard results. Effects of overexposure may include nausea, vomiting, diarrhea, weakness or convulsions. Treatment: For large amounts, seek medical attention.

9. Preparation Date

Cindy Moline, High Brix Manufacturing 1-306-747-4744 2021-01-25

Washington State Department of Agriculture Organic Program

In accordance with Chapter 15.86 RCW and Chapter 16-160 WAC - this

Organic Input Material Registration Certificate

is issued to:

Advanced Marine Technologies

33 Cape Street New Bedford, MA 02740 United States

The following products have been evaluated for use in organic agriculture and WSDA has determined they comply with the applicable sections of 7 CFR 205 for the purposes listed on this certificate when all listed restrictions are observed:

No.	Product Name	Type	Restrictions on use
2798	Organic Gem Liquid Fish Fertilizer 3-3-0.3	FSA: Fish Product - Liquid	NONE
3132	Green Earth Organic Fish Hydrolysate Fertilizer 2-4-0.2	FSA: Fish Product - Liquid	NONE
3246	Organic Phase II Fertilizer	FSA: Liquid Fertilizer	NONE

Registration Number: 823 Issue Date: 11/01/2023

Registration valid through: 12/31/2024

Runda

Brenda Book Organic Program Manager





CPA - Crop Production Aid, DPC - Disease and Pest Control, FSA - Fertilizer and Soil Amendment, LF - Livestock Feed, LH - Livestock Health Care, LPA - Livestock Production Aid, PH - Processing and Handling, PPC - Processing Pest Control, PSC - Processing Sanitizer and Cleaner



ORGANIC GEM

QUID FISH FERTILIZER

ORGANIC BASED HYDROLYSATE

GUARANTEED ANALYSIS:

Total Nitrogen (N)

2.6%

0.2% Ammoniacal Nitrogen

0.2% Urea Nitrogen (naturally occuring from fish)

0.4% Water Insoluble Nitrogen

1.8% Other Water Soluble Nitrogen

Available Phosphate (P₂0₅)

3.0%

Soluble Potash (K₂0)

0.3%

INGREDIENTS:

Derived from: Fish Hydrolysate (stabilized by phosphoric acid and lactic acid)

Fish fertilizers have been used for hundreds of years. Native Americans first demonstrated how to use fish to grow healthier and more bountiful crops. Organic Gem[®] promotes nutrient healthy crops and vigorous growth of plants and vegetables

MIX WELL BEFORE USING

MUST BE DILUTED WITH WATER Do not store in diluted form. Thoroughly clean all equipment after use.

For Plants: Mix 1-2 oz. of Organic Gem® per gallon of water. Apply generously to soil or foliage until leaves are wet top and bottom. Feed every 2 weeks.

For Lawns: Mix 4 oz. of Organic Gem® per gallon of water. Feed every 4 weeks. One gallon of undiluted Organic Gem[©] will cover 1/4 acre.

CALITION

INTENDED FOR USE BY COMMERCIAL GROWERS ONLY

HARMFUL IF SWALLOWED. AVOID CONTACT WITH EYES, OPEN CUTS OR SORES, KEEP OUT OF REACH OF CHILDREN, WASH HANDS AND ALL TOOLS AFTER USE. NOTICE: BUYER ASSUMES ALL RESPONSIBILITY FOR SAFETY AND USE IN ACCORDANCE WITH DIRECTIONS. Information regarding the contents and levels of metals in this product is available on the internet at https://aapfco.org/metals.htm.

THIS PRODUCT HAS BEEN SPECIFICALLY FORMULATED TO MEET OR EXCEED THE STANDARDS OF THE FOOD SAFETY MODERNIZATION ACT OF 2016.

Guaranteed and Manufactured by Advanced Marine Technologies, 33 Cape Street, New Bedford, MA 02740 (508) 991-5225 www.organicgem.com

DENSITY 8.6 LBS/GALLON @ 68°F

5 U.S. Gallons/18.9 Liters (Net Wt. 43 lbs/19.5 kg)

55 U.S. Gallons/208 Liters (Net Wt. 473 lbs/215 kg)	S
(Net Wt. 473 lbs/215 kg))



cdfa

MATERIAL SAFETY DATA SHEET

Section 1. Product and Company Identification

Product Name: Organic Gem® 3-3-.3

Company Name: Advanced Marine Technologies

33 Cape Street

New Bedford, MA. 02740

(508) 991 5225 Fax (508) 991 3033

Email www.organicgem.com

Section 2. Composition, Information on Ingredients

Product Use: Soil Amendment

Ingredients: Hydrolyzed fish (97%), Phosphoric Acid (3%)

Section 3. Hazards Identification

May act as a slight irritant to skin or lung. Prolonged skin contact could result in dermatitis in sensitive individuals.

Section 4. First Aid Measures

Eye contact: Immediately rinse with running water for 15 minutes.

Skin contact: Immediately rinse with running water

Inhalation: Move to fresh air

Ingestion: Drink water and call physician

Section 5. Fire Fighting Measures

Flash Point: N/A

Flammability: N/A

Fire Hazard: N/A

Fire Fighting Procedures: No restrictions

Flammability Limits: N/A

Section 6. Accidental Release Measures

Spill cleanup: Mop up small spills. For larger spills, soak up all liquid with speedi-dry, then wash with soap and water.

Cleaning of Equipment: Wash with soap and water.

Section 7. Handling and Storage

Handling: Avoid contact with skin and eyes. Wash contaminated clothes before reusing.

Storage: Do not store in diluted form.

Section 8. Exposure Controls, Personal Protection

Eyes: Use safety eyewear to protect against splash of liquids.

Body: For prolonged or repeated use, use rubber gloves.

Respiratory: Dust mask

Section 9. Physical and Chemical Properties

Physical State: Liquid

Ph: 3.5

Boiling Point: 105 C

Solubility: 80%

Color: Brown

Odor: Mild fish scent

Section 10. Stability and Reactivity

Stability: Stable

Conditions to avoid: Do not store in diluted form.

Incompatibility: N/A

Hazardous Polymerization: Will not occur

Section 11. Toxicological Information

N/A

Section 12. Ecological Information

Easily biodegradable

Section 13. Disposal Considerations

Waste Information: Waste must be disposed of in accordance with federal, state and local regulation.

Section 14. Transport Information

Class 50, not restricted.

Section 15. Regulatory Information

US Federal Regulation: N/A

Section 16. Other Information

To the best of our knowledge, the information contained within is accurate. User assumes all liability for unsafe use of product. Final determination of suitability of any material is sole responsibility of user.



ORTHODOX UNION LETTER OF KOSHER CERTIFICATION

בס"ד

UNIONOFORTHODOXJEWISHCONGREGATIONSOFAMERICA איחוד קהילות האורתודוקסים באמריקה
FORTY RECTOR STREET / NEW YORK, NY 10006 / 212-613-8241 / KOSHERLETTER@OU.ORG / OUKOSHER.ORG

May 11, 2023

This is to certify that the following product(s) prepared by

Shandong Ensign Industry Co., LTD., No. 1567 Changsheng Street, Changle, Weifang, Shandong, - 262499 P.R. CHINA

at the following facilitie(s) are under the supervision of the Kashruth Division of the Orthodox Union and are kosher as indicated below.

Shandong Ensign Industry Co., LTD. [CIQ#:3709001588], No. 1567 Changsheng Street, Changle, Weifang, Shandong, P.R. CHINA

Product Name	UKD-ID	Status	Certification Requirements
Brand: Ensign			
Calcium Citrate	OUV3-AE615F2	Pareve	U Symbol required.
Citric Acid	OUV3-969FA2A	Pareve	U Symbol required.
Citric Acid Anhydrous	OUV3-K2J1V8Y	Pareve	U Symbol required.
Citric Acid Monohydrate	OUV3-NHYMLD5	Pareve	U Symbol required.
• Ethanol	OUV3-AD5BF49	Pareve	U Symbol required.
Potassium Citrate	OUV3-3CE117C	Pareve	① Symbol required.
Sodium Citrate	OUV3-FE7A78B	Pareve	U Symbol required.

Use of the OU trademark must comply with the terms set forth in a written agreement with the Orthodox Union. Any other use of the OU trademark is not authorized.

Merachu Seach

This certification is valid through 05/31/2024



CERTIFICATEOF REGISTRATION

Intertek Certification Ltd (UKAS 014) certifies that, having conducted an audit **for the Scope of Activities:** Production of food additives-citric acid, calcium citrate, sodium citrate and potassium citrate packed in plastic bag.

With the Exclusions from Scope: None

In the Product Categories: 15 - Dried foods and

ingredients

at

SHANDONG ENSIGN INDUSTRY CO.,LTD.

BRCGS Site Code: 2015764

Site Address: No. 1567, Changsheng Street, Changle County, Weifang

City, Shandong Province, 262499, P. R. China.

Has achieved Grade: A+

Meets the requirements set out in the

GLOBAL STANDARD for FOOD SAFETY

ISSUE 9: AUGUST 2022

Audit Programme: Unannounced



Auditor Number:

24531

Certificate Number:

051A2002002

Dates of Audit:

07-09 Feb 2023

Certificate Issue Date:

13 Mar 2023

Re-audit Due Date:

(An.): 26 Apr 2024 to 24 May 2024 (Unan.): 24 Jan 2024 to 24 May 2024

Certificate Expiry Date:

05 Jul 2024





ntertek

BRGS
Food Safety

CERTIFICATED



Calin Moldovean

President Business Assurance

Intertek Certification Ltd – 10a Victory Park, Victory Road, Derby DE24 8ZF, United Kingdom

Intertek Certification Limited is a UKAS accredited body under schedule of Accreditation No. 014









according to 1907/2006/EC, Article 31

Revision: 15.06.2017 Version number 3 Superseded version: No 2/22.03.2014

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

1.1 Product identifier

Trade name: Citric Acid Monohydrate

CAS number: 5949-29-1 **EC number:** 201-069-1

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

Application of the substance / the preparation:

Intermediate Formulation

Detergents and cleaning products

Agricultural applications

Personal care products

Paper industry

Construction products

Polymers and plastics

Oil industry

Textile industry

Paints and coatings

Photography products

Laboratory reagents

Water treatment

Treatment of metal surfaces

Medical devices

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Weifang Ensign Industry Co., Ltd.

No.1567, Changsheng Street, Changle, Weifang, Shandong, China

Tel: +86-536-6298125

Fax: +86-536-6234587 ext. 8125 E-mail: sales@ensignworld.com

www.ensignworld.com

1.4 Emergency telephone number(s): 0086-536-6298125

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Eye Irrit. 2 H319 Causes serious eye irritation.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008:

The substance is classified and labelled according to the CLP regulation.

Hazard pictograms:



GHS07

Signal word: Warning



according to 1907/2006/EC, Article 31

Revision: 15.06.2017 Version number 3 Superseded version: No 2/22.03.2014

Trade name: Citric Acid Monohydrate

Hazard statements:

H319 Causes serious eye irritation.

Precautionary statements:

P264 Wash thoroughly after handling.
P280 Wear eye protection / face protection.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: No PBT. vPvB: No vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

CAS Number. Description.

5949-29-1 Citric Acid Monohydrate

Identification number(s) EC number: 201-069-1

SECTION 4: First aid measures

4.1 Description of first aid measures

After inhalation: Move patient to fresh air, if symptoms persist consult a doctor.

After skin contact:

Immediately rinse with water.

If skin irritation continues, consult a doctor.

After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing:

Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

4.2 Most important symptoms and effects, both acute and delayed

Serious eye damage/eye irritation: Eye Irrit. 2

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:

CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture

Carbon dioxide (CO2)

Carbon monoxide (CO)

5.3 Advice for firefighters

Protective equipment:

Wear fully protective suit.



according to 1907/2006/EC, Article 31

Revision: 15.06.2017 Version number 3 Superseded version: No 2/22.03.2014

Trade name: Citric Acid Monohydrate

Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

Ensure adequate ventilation.

6.2 Environmental precautions Do not allow to enter sewers/ surface or ground water.

6.3 Methods and material for containment and cleaning up

Send for recovery or disposal in suitable receptacles.

Retrieve the product by mechanical means.

Dispose contaminated material as waste according to item 13.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Use only in well ventilated areas.

Provide suction extractors if dust is formed.

Do not inhale dust / smoke / mist.

Avoid contact with the eyes and skin.

Information about fire - and explosion protection: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:

Store in a cool, dry location in well sealed receptacles.

Provide ventilation for receptacles.

Store only in the original receptacle.

Information about storage in one common storage facility: Store away from oxidising agents.

7.3 Specific end use(s): No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace: Not required.

PNECS	PNECs		
77-92-9	O Citric Acid Anhydrous		
PNEC	0.44 mg/L (Water (Freshwater))		
	0.044 mg/L (Water (Marine Water))		
	>1000 mg/L (Sewage Treatment Plant (STP))		
PNEC	3.46 mg/kg sedim. dw (Sediment (Marine Water))		
	34.6 mg/kg sedim. dw (Sediment (Freshwater))		
PNEC	33.1 mg/kg soil dw (Soil)		

Additional information: The lists valid during the making were used as basis.



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8.2 Exposure controls

Personal protective equipment

General protective and hygienic measures:

Do not inhale dust / smoke / mist. Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work. Do not eat, drink, smoke or sniff while working.

Respiratory protection: Suitable respiratory protective device recommended.

Protection of hands:



Protective gloves.

Material of gloves: Rubber, PVC or neoprene gloves recommended.

Eye protection:



Tightly sealed goggles (EN 166).

Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

Form:

Colour:

Solid.
Crystalline
White.

Odourless.

Odour: Odourless.
Odour threshold: Not determined.

pH-value (100 g/l) : 1.7

Melting point/freezing point:

Initial boiling point and boiling range: Not determined.

Decomposes before boiling

Flash point: Not applicable.

Flammability (solid, gas): Product is not flammable.

Ignition temperature:Not applicable.Decomposition temperature:Not determined.

Explosive properties: Product does not present an explosion hazard.

153 ℃

Explosion limits:

Lower:
Upper:Not determined.Oxidising propertiesNot oxidising.Vapour pressure at 25 ℃:2.21*10-6 Pa



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Density: Not determined.

Relative density at 20 ℃ 1.665

Vapour density Not applicable.

Evaporation rate Not applicable.

Solubility in / Miscibility with

Water at 20 ℃: 590 g/l Alcohols: Partly soluble.

Partition coefficient: n-octanol/water: -0.2 - -1.8 log Pow

Viscosity:

Dynamic: Not applicable. **Kinematic:** Not applicable.

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

10.1 Reactivity No data available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: Stable at environment temperature.

- 10.3 Possibility of hazardous reactions Reacts with alkali (lyes).
- 10.4 Conditions to avoid Keep away from heat and direct sunlight.

10.5 Incompatible materials

Protect from moisture.

Avoid strong oxidants, strong alkalis and strong acids.

10.6 Hazardous decomposition products

Carbon dioxide Carbon monoxide

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

LD/LC50 values:		
77-92-9	Citric	Acid Anhydrous
Oral	LD50	5400 mg/Kg bw (Mouse) (OECD 401)
Dermal	LD50	>2000 mg/Kg bw (Rat) (OECD 402)

Primary irritant effect:

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.



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Aspiration hazard: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic to	Aquatic toxicity:		
77-92-9 C	77-92-9 Citric Acid Anhydrous		
LC50/48h	440 mg/L (Fish) (OECD 203)		
NOEC	425 mg/L (Algae)		
LC50/24h	1535 mg/L (Daphnia Magna)		

- 12.2 Persistence and degradability Readily biodegradable.
- 12.3 Bioaccumulative potential Does not accumulate in organisms.
- **12.4 Mobility in soil** pKa: 3.13, 4.76 and 6.4 at 25 ℃
- 12.5 Results of PBT and vPvB assessment

PBT: No PBT. **vPvB:** No vPvB.

12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation: Do not allow product to reach sewage system.

Uncleaned packaging: Recommendation:

Disposal must be made according to official regulations.

Packaging that may not be cleansed must be disposed of in the same manner as the product.

SECTION 14: Transport information

14.1 UN Number

ADR, ADN, IMDG, IATA Not applicable.

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA Not applicable.

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class Not applicable.

14.4 Packing group

ADR, IMDG, IATA Not applicable.

14.5 Environmental hazards

Marine pollutant: No

14.6 Special precautions for userNot applicable.

14.7 Transport in bulk according to Annex II

of MARPOL 73/78 and the IBC Code Not applicable.



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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment A Chemical Safety Assessment has been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

* Data compared to the previous version altered.

Classification and labelling according to Directive 67/548/EEC in section 2 has been removed.