



**Commissioners:** Edward Burnett Darrell Kirby Star Smith

**Park Commission** 

# YPSILANTI TOWNSHIP PARK COMMISSION

# **REGULAR MEETING**

Date: Monday, April 3, 2023

Time: 6:30 P.M.

# **LOCATION**

1<sup>st</sup> board room Ypsilanti Township Civic Center 7200 S. Huron River Drive Ypsilanti, Michigan 48197 Chairperson Tajalli Hodge Vice Chairperson David Streeter Treasurer Brad Hine Secretary Jeff Neel





Commissioners Edward Burnett Darrell Kirby Star Smith

# **Park Commission**

REGULAR MEETING AGENDA MONDAY, APRIL 3, 2023 6:30 P.M.

- I. Call to Order
- II. Roll Call
- III. Determination of Quorum
- IV. Approval of Agenda
- V. Approval of Minutes from the March 6, 2023 regular meeting
- VI. Citizens Participation
- VII. Reports A. Staff Reports
  - **B.** Commissioner Reports
- VIII. Unfinished Business A. 2023 USGS Phragmites Research at North Hydro Park
  - IX. New Business
  - X. Announcements
  - XI. Recommendations to the Township Board A. 2023 USGS Phragemites Research at North Hydro Park
- XII. Adjournment

# CHARTER TOWNSHIP OF YPSILANTI PARK COMMISSION PROPOSED MINUTES OF THE MARCH 6, 2023 REGULAR MEETING

Park Commission Agendas and Minutes are available on the township website at <u>https://ytown.org/park-commission</u>

# I. Call to Order

Commission Hodge called the meeting to order at 6:31 p.m. at the Ypsilanti Township Civic Center.

# II. Roll Call

**Commissioners Present:** Tajalli Hodge, Jeff Neel, Brad Hine, Darrell Kirby, Starr Smith, Ed Burnett

**Commissioners Not Present:** David Streeter **Staff Present:** John Hines

**III.** Determination of Quorum Quorum present.

# IV. Approval of Agenda

Motion to approve agenda made by Hine Seconded by Kirby Motion Carried Unanimously

- V. Approval of Minutes Approval of February 9, 2023 Regular Meeting Motion to approve minutes made by Neel Seconded by Smith Motion Carried Unanimously
- VI. Citizens Participation None.

# VII. Reports

# A. Staff Reports

John Hines, Recreation Services Manager and Interim Residential Services Director

- Officially started Master Plan process with Beckett & Raeder. Township leaders met to form committee and that process is complete. Township will now move forward with broadcasting meeting times and public feedback options.
- Township Parks and Grounds will start wood chipping to address downed trees from recent major ice/snow storm. Neighborhood schedule will be based on recycling schedule. Lots of damage so likely 2 to 4 weeks to clean up. Golf course was severely affected lots of trees down and damage to fences.
- Loonfeather Update: Working Tue and Wed (March 7 & 8) to put finishing touches such as paint on railing work. John will meet with township attorneys and leadership to finalize payment in the next month.
- Community Center repairs: while floor is up, will investigate repairing old plumbing.
- Ann Abor JC Hydroplane racing requests postponed until 2024 because of conflict with Jazz Fest. Parking, trash collection, etc. is vastly complicated when trying to run two separate events on the same weekend.

Discussion: Commissioner Hine asked if there have been any developments in the investigation into vandalization at Green Oaks Golf Course. Law enforcement has not reported any conclusion but lack of witnesses or evidence is problematic. However, Kirk Sherwood, Director of Golf Operations, feels the course is in good shape and there is more seasonal help at golf course this year.

**B.** Commissioner Reports

None.

VIII. Unfinished Business None.

# IX. New Business

USGS Update: Biologist Spencer Widin requesting access again this year. In 2022, USGS treated 30 plots. The major issue to successfully controlling phragmites infestation is killing root system. USGS has refined the herbicide formula and is testing again this year. Looking to expand to new areas starting in late March/early April and will monitor through fall and continue next year. Commissioner Hodge asked about change in formula, application methods. Spencer: application method is same; ingredients are same but concentration is different and Glycerol (sugar) is a new ingredient at less than 3% of new formulation. Also working with a firm in Ohio to introduce naturally-occurring microbes to test effectiveness; will submit details in a document for Township to review. Burnett: asked if other communities and parks are participating. Spencer: yes, Oakland, Wayne County Parks, and DTE site are all participating, and are in the process of negotiating with Grosse Isle.

# X. Announcements

None.

# XI. Recommendation

Commissioner Hodge recommends that we submit to Township Board that Parks Commission approves USGS to clear phragmites from plots treated last year and, pending submission of refined ingredients formula, approve continuation of herbicide trials. Motion to approve recommendation: Kirby Seconded: Hine Motion passes unanimously.

# XII. Adjournment

Motion to adjourn: Burnett Seconded: Neel Meeting Adjourned at 6:53 p.m.

Minutes taken and prepared by Jeff Neel, Secretary



# United States Department of the Interior

U.S. GEOLOGICAL SURVEY

Great Lakes Science Center 1451 Green Road Ann Arbor, Michigan 48105 PH: (734) 994-3331 FAX: (734) 994-8780

March 10<sup>th</sup>, 2023

Subject: Request for permission to conduct Phragmites research at North Hydro Park, Ypsilanti, MI

The non-native *Phragmites australis* (common reed) is a tall invasive grass found throughout North America. It crowds out native plants, degrades fish and wildlife habitat, reduces property values, and can even be a fire hazard. Therefore, finding better ways to manage it is a high priority in Michigan and throughout the Great Lakes basin. The Great Lakes *Phragmites* Collaborative supports a web site (https://www.greatlakesphragmites.net/) that describes the plant and what the science and management community is doing about it, including what research is happening to develop new treatment options for managers. The U.S. Geological Survey Great Lakes Science Center is working with academic partners to develop new, non-toxic treatments that target bacteria and fungi that help the invasive *Phragmites* have such a negative impact on the landscape (see the text and videos available on the Collaborative web site). In the Summer of 2022, the Ypsilanti Township Recreation and Parks Commission allowed us access to North Hydro Park to conduct a test of our experimental non-toxic bioherbicide that contains sugars, citric and other oils, amino acids, and other naturally occurring components. That experiment produced positive results, so we are actively working to refine and test this product in our greenhouse to further improve the effect on limiting *Phragmites* growth. We've had a great partnership with the Township over the years and appreciated the access to the *Phragmites* stands within the park. We now request approval to continue our research on the *Phragmites* in the park as we develop the new treatment approach further.

Our experimental treatments focus on the relationship that bacteria and fungi have with the invasive *Phragmites.* We know that bacteria, fungi, and other microbes can help the plant grow and be healthy, so we are targeting those microbes as a way to limit growth of the plant. We anticipate spraying a non-toxic solution composed of 5-20% citric oil, 1-15% arginine, 1-20% sucrose, 1-10% glycerol, commercially available microbes (yeast and bacteria), and water as the carrier on *Phragmites* in 1 m x1 m plots spread throughout the study site. A map of the proposed study areas is included below, and material safety data sheets (MSDS) will be provided as separate documents for each component product used. Depending on how the plots are arranged, we envision creating at least 30 plots within the park. This will involve first clearing standing dead stems with a gas-powered hedge trimmer in late March-mid April 2023 and piling up cut stems in an appropriate location on site. In these cleared areas, we will lay out at least 30 of the 1 m x 1 m plots such that they are at least two meters away from neighboring plots and stand edges. Each plot will be isolated from the surrounding patch of *Phragmites* by severing belowground connections (i.e., rhizomes) by inserting a serrated root spade along plot boundaries. We will monitor for plant growth and health prior to spraying our liquid bioherbicide treatments on the plants with a handheld pump sprayer. We will monitor plant response throughout the summer, applying additional treatments as needed. Our experiments will involve regular weekday access (1-3 times per week) to the site during daylight hours through November 2023 and then revisiting the site in Spring 2024 to observe effects on plant reemergence. Clearing of existing standing dead *Phragmites* stems and walking through the site will create paths visible from the road or adjacent park paths, so we will work with Township on appropriate signage that explains the collaborative science happening at the site. We will share a more detailed plan with

anyone seeking additional information on our study. All necessary permits will be obtained from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and any individuals applying the bioherbicide will have or be supervised by someone with a Commercial Pesticide Applicators Certification. We thank you for considering this request and look forward to hearing from you. Please reach out with any questions.

Sincerely,

15t f. Kull ...

Dr. Kurt Kowalski, Research Ecologist kkowalski@usgs.gov



Chair TAJALLI HODGE Vice-Chair DAVID STREETER Secretary JEFF NEEL Treasurer BRAD HINE Commissioners DARREL KIRBY STAR SMITH



7200 S. Huron River Drive Ypsilanti, MI 48197 Phone: (734) 484-4700 Fax: (734) 484-5156

# **Ypsílantí Townshíp Park Commission**

# RECOMMENDATION TO APPROVE USGS PHRAGMITES REMOVAL FOR RESEARCH AT NORTH HYDRO PARK

March 6, 2023

The Ypsilanti Township Park Commission makes a recommendation to approve USGS to clear Phragmites in North Hydro Park in preparation of continuing the research started in 2022.

The motion for the recommendation to the Township Board was made by Commissioner Kirby and seconded by Commissioner Hine.

YES: Burnett, Hodge, Hine, Neel, Kirby, Smith | NO: None | ABSTAIN: None | ABSENT: Streeter.

Iodge, Chaii

Chair TAJALLI HODGE Vice-Chair DAVID STREETER Secretary JEFF NEEL Treasurer BRAD HINE Commissioners DARREL KIRBY STAR SMITH



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# **Ypsílantí Townshíp Park Commission**

# RECOMMENDATION TO APPROVE USGS PHRAGMITES REMOVAL FOR RESEARCH AT NORTH HYDRO PARK

April 3, 2023

The Ypsilanti Township Park Commission makes a recommendation to approve USGS to treat Phragmites in North Hydro Park, continuing the research started in 2022.

Tajalli Hodge, Chair

# DRAFT



# **L-Arginine HCl**

Safety Data Sheet According to Regulation (EC) 1272/2008 Issue Date: 01/12/21 Revision date: 01/12/24

SECTION 1 - Chemical Product and Company Identification		
1.1 Product Identifiers		
Product Name CAS # EC# RTECS#	<ul> <li>L-Arginine HCl</li> <li>1119-34-2</li> <li>214-275-1</li> <li>CF1995500</li> </ul>	
1.2 Recommended Use of the Chemical and Re	strictions of Use	
Chemical manufacturing		
1.3 Supplier Details		
Supplier :	BioSpectra, Inc. 100 Majestic Way Bangor, Pa 18013 T: 610.599.3400 ra@biospectra.us	
1.4 Emergency Numbers		
Emergency Number	<ul> <li>: US &amp; Canada: 1-800-424-9300</li> <li>: Outside the US &amp; Canada: +1 703-527-3887</li> </ul>	
SECTION 2 – Hazard Identification		
2.1 Classification of Substance or Mixture		
Not a hazardous substance or mixture.		
2.2 GHS Label Elements Including Precaution	ary Statements	
Not a hazardous substance or mixture.		
2.3 Hazards not Classified or not Covered by the	he GHS	

#### None

### **SECTION 3 – Composition, Information on Ingredients**

Component	Classification	Concentration
L-Arginine HCl	Not a hazardous substance	> 98%
Synonyms Formula Molecular Weight	<ul> <li>: (2S)-2-amino-5-(diaminomethylideneamino)</li> <li>: C<sub>6</sub>H<sub>14</sub>N<sub>4</sub>O<sub>2</sub>·HCl</li> <li>: 210.66 g/mol</li> </ul>	pentanoic acid; hydrochloride

SECTION 4 - First Aid Measures				
4.1 Description of Necessary First Aid Meas	ures			
Eyes	:	Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.		
Skin	:	Get medical aid. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes.		
Ingestion	:	DO NOT induce vomiting unless instructed to do so by a medical professional. Never give anything by mouth to an unconscious person. Get medical aid immediately.		
Inhalation	:	Get medical aid immediately. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.		

4.2 Most Important Symptoms/Effects, Acute and Delayed

Refer to Section 2.2 for Precautionary Statements if any are applicable.

4.3 Indication of Immediate Medical Attention and Special Treatment

No information available

**SECTION 5 - Firefighting Measures** 

**5.1 Extinguishing Media** 

Water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific Hazards Associated with this Chemical

Carbon oxides, nitrogen oxides (NOx), Hydrogen chloride gas

**5.3 Special Equipment/Precautions for Firefighters** 

May be combustible at high temperatures. As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode. Explosion will appear as fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**5.4 Other Information** 

None available.

**SECTION 6 - Accidental Release Measures** 

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Avoid dust formation. Avoid breathing vapours, mist or gas. Use proper personal protective equipment as indicated in Section 8.

**6.2 Environmental Precautions** 

Do not allow to enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions.

**6.4 Other Information** 

None available.

**SECTION 7 - Handling and Storage** 

7.1 Precautions for safe handling

Use with adequate ventilation. Take into consideration the avoidance of formation of combustible dust before processing. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

7.2 Conditions for Storage Including any Incompatibilities

Store in a dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

#### 7.3 Other Information

None available.

### **SECTION 8 - Exposure Controls, Personal Protection**

#### 8.1 Control Parameters

Chemical does not contain any substances with occupational exposure limits

#### 8.2 Engineering Controls

Use adequate ventilation to keep airborne concentrations low.

#### 8.3 Personal Protective Equipment

#### Eyes

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

#### Skin

Wear appropriate protective gloves to prevent skin exposure. Wear impervious gloves Nitrile rubber with layer thickness 0.11mm.

#### Clothing

Wear appropriate protective clothing to prevent skin exposure.

#### Respirators

Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. A respiratory protection program that meets OSHA's 29 CFR '1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

#### **SECTION 9 - Physical and Chemical Properties**

D1 1 0		G 1' 1
Physical State	:	Solid
Appearance	:	White
Odor	:	Not available
pH	:	5.5-7 at 211 g/L at 25 ° C
Vapor Pressure	:	Not available
Vapor Density	:	Not available
Viscosity	:	Not available
Melting Point	:	226-230° C
Boiling Point	:	Not available
Decomposition Temperature	:	Not available
Specific Gravity/Density	:	Not available
Solubility	:	211 g/L at 20 ° C
Molecular Formula	:	$C_6H_{14}N_4O_2^{}HCl$
Molecular Weight	:	210.66 g/mol

### **SECTION 10 - Stability and Reactivity**

#### **10.1 Chemical Stability**

Stable under normal temperatures and pressures.

#### **10.2 Conditions to Avoid**

No information available.

10.3 Incompatibilities with Other Materials	
Strong oxidizing agents.	
10.4 Hazardous Decomposition Products	
No information available.	
10.5 Hazardous Polymerization	
Will not occur.	
SECTION 11 - Toxicological Information	
11.1 Toxicological Effects	
Acute Toxicity	
LD50 Oral	: rat: 12,000 mg/kg
Remarks	: Behavioral: Altered sleep time (including change in righting reflex). Behavioral: Ataxia. Lungs, Thorax, or Respiration: Dyspnea.
Carcinogenicity:	
CAS# 1119-34-2	: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA
Epidemiology	: No information available
Teratogenicity	: No information available
Reproductive Effects	: No information available
Neurotoxicity	: No information available
Mutagenicity	: No information available
Other Studies	: No information available
11.2 Additional Information	

RTECS#

: CF1995500

To the best of our knowledge the associated physical, chemical and toxicological properties of this chemical have not undergone thorough investigation, all known information is contained in this SDS.

**SECTION 13 - Disposal Considerations** 

Dispose of in a manner consistent with Federal, State, and Local Regulations.

SECTION 14 - Transport Information					
	US DOT	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:					
Hazard Class:	No Information	No Information	No Information	No Information	No information
UN Number:	Available	Available	Available	Available	available.
Packing Group:					
SECTION 15 - Regulatory Information 15.1 EHS Chemical Specific Regulations					
Section 302 (TPQ): None of the chemicals in this product have a TPQ.Section 313: No chemicals are reportable under Section 313.SARA 311/312 Hazards: No SARA Hazards					
SPECIFIC STATE:					
Massachusetts Right To Know Components :		No components are subject to the Massachusetts Right to Know Act.			
Pennsylvania Right To Know Con	nponents :	L-(+)-Arginine hydrochloride CAS-No. 1119-34-2			
California Prop. 65 Components : $L^{-(+)}$ -Arginine hydrochioride CAS-No. 1119-34-2 : This product does not contain any chemicals known to State of California cause cancer, birth defects, or any other reproductive harm.		California to			

#### **SECTION 16 - Additional Information**

### 16.1 Hazard Ratings

HMIS Rating		
Health hazard	0	
Flammability	0	
Physical Hazard	0	

NFPA Rating		
Health hazard	0	
Fire Hazard	0	
Reactivity Hazard	0	

The information conveyed in this Safety Data Sheet is only a representation of what BioSpectra has found to be accurate based on the current information that is available in regards to this compound. BioSpectra makes no warranty, expressed or implied, with respect to such information, and therefore assumes no liability resulting from product usage. It is strongly recommended that users of this product perform their own investigations to determine the accuracy and suitability of the information for their specific purposes. In no way will BioSpectra assume liability for any claims, losses, damages to any third party, any lost profits or any special, indirect, incidental, consequential or exemplary damages that may arise, even if BioSpectra has been advised of the possibility of such damages.

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	RESEARCH PRODUCTS INTERNATIONAL	12/15/14	REV Date :11/25/15
DOCUMENT #: F/RPI/QC 7.7.3-02	PRODUCT NAME: Glycerol ACS Grad	e	RPI ITEM NO: G22025

#### **SECTION 1 - CHEMICAL IDENTIFICATION**

PRODUCT NAME: RPI CATALOG #: SUPPLIER'S NAME: SUPPLIERS ADDRESS: EMERGENCY CONTACT: OTHER INFORMATION: Glycerol ACS Grade G22025 Research Products International Corp. 410 N Business Center Drive Mount Prospect, Il 60056 1-800-424-9300 847-635-7330

#### **SECTION 2 - HAZARDS IDENTIFICATION**

#### 2.1 Classification of the substance or mixture

#### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Not hazardous

Signal word: None

#### Hazard statement(s): Not hazardous

#### **Precautionary statements:**

P101	If medical advice is needed, have product container or label at hand
P102	Keep out of reach of children.
P501	Dispose of contents/ container to an approved waste disposal plant.

#### SECTION 3- COMPOSITION/INFORMATION ON INGREDIENTS

CAS Number:	56-81-5
EINECS Number:	200-289-5
Molecular Weight	92.1 g/mol
Formula	C <sub>3</sub> H <sub>8</sub> O <sub>3</sub>

#### SECTION 4 - FIRST-AID MEASURES

#### 4.1 Description of first aid measures

General advice: Consult a doctor and show this safety data sheet.

- i. **If inhaled:** Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.
- ii. **In case of skin contact:** Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.
- iii. In case of eye contact: Flush with copious amounts of water for at least 15 minutes. Consult a doctor.
- iv. **If swallowed:** Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

**4.2** Most important symptoms and effects, both acute and delayed: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed: Show this safety data sheet to

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the doctor in attendance. Immediate medical attention is required.

#### **SECTION 5 - FIRE FIGHTING MEASURES**

#### 5.1 Extinguishing media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

#### 5.2 Special hazards arising from the substance or mixture: Carbon oxides.

**5.3 Precautions for fire-fighters:** Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

#### 5.4 Further information: No data available

#### **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**6.1 Personal precautions, protective equipment and emergency procedures:** Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions: Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up:** Cover spillage with suitable absorbent material. Using non-spark tools, sweep up material and place in an appropriate container. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections: For required PPE see section 8. For disposal see section 13.

#### **SECTION 7 - HANDLING AND STORAGE**

**7.1 Precautions for safe handling:** Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

**7.2** Conditions for safe storage, including any incompatibilities: Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Keep in a dry place. Hygroscopic.

7.3 Specific end use(s): Use in a laboratory fume hood where possible. Refer to employer's COSHH risk assessment.

#### SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1 Control parameters

#### Components with workplace control parameters

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV	OSHA PEL
	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	(Vacated) TWA: 10 mg/m <sup>3</sup>
Glycerol				Vacated) TWA: 5 mg/m <sup>3</sup>
				TWA: 15 mg/m <sup>3</sup>
				TWA: 5 mg/m <sup>3</sup>

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\* **ACGIH:** American Conference of Governmental Industrial Hygienists.

- **OSHA:** Occupational Safety and Health Administration.
- NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health.

#### 8.2 Exposure Controls

i. **Appropriate engineering controls:** Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

#### 8.3 Personal protective equipment

- **i. Eye/face protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- **ii. Skin protection:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166
- iii. **Body Protection:** Wear appropriate protective clothing. Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- iv. **Respiratory Protection:** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
- v. **Control of environmental exposure:** Do not let product enter drains

#### **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

#### Information on basic physical and chemical properties

Appearance	Colorless Liquid	Vapor Pressure	No Data Available
Odor	Odorless	Vapor Density	No Data Available
Odor Threshold	No Data Available	Relative Density	1.25 g/mL
рН	No Data Available	Water Solubility	No Data Available
Melting / Freezing Point	18 °C	Partition Coefficient	No Data Available
Initial Boiling Point Range	290 °C	Auto-Ignition Temperature	No Data Available
Flash Point	160 °C	Decomposition Temperature	No Data Available
Evaporation Rate	No Data Available	Viscosity	No Data Available
Flammability (Solid, Gas)	No Data Available	Explosive Properties	No Data Available
Upper / Lower Flammability Or Explosive Limits	No Data Available	Oxidizing Properties	No Data Available

#### **SECTION 10 - STABILITY AND REACTIVITY**

**Stability:** Stable under recommended storage conditions. **Hazardous Decomposition Products/ Hazardous Polymerization:** No Data Available. **Incompatibilities:** Strong Oxidizing Agent.

#### **SECTION 11 - TOXICOLOGICAL INFORMATION**

Acute Toxicity					
LD50 Oral LD50 Dermal LD50 Inhalation					
12,600 mg/kg (Rat)	> 10,000 mg/kg (Rabbit	570 mg/m <sup>3</sup> 1-h (Rat)			

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#### SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity						
Component	Freshwater Fish	Microtox	Water Flea			
Glycerol	51 - 57 mL/L LC50 96 h	Not Listed	500 mg/L EC50 > 24h			

Ecotoxicity

#### Mobility

Component	log Pow
Glycerol	-1.76

#### **Persistence and degradability/ Bioaccumlative potential:** No data available **Results of PBT and vPvB assessment/ other adverse effects:** No data available

#### SECTION 13 - DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

#### **SECTION 14 - TRANSPORT INFORMATION**

DOT	TDG	ΙΑΤΑ	IMDG/IMO
Not regulated	Not regulated	Not regulated	Not regulated

#### **SECTION 15 - REGULATORY INFORMATION**

#### INTERNATIONAL INVENTORIES

TSCA	DSL	NDSL	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Listed	Listed	-	-	-	Listed	Listed	Listed	Listed	Listed

#### **USA FEDERAL REGULATION**

#### SARA 311/312 HAZARDOUS CATEGORIZATION

Acute Health	Chronic Health	Fire Hazard	Sudden Release Of	Reactive
Hazard	Hazard		Pressure Hazard	Hazard
No	Yes	No	No	No

Clean Water Act/ Clean Air Act: No Data Available

TSCA 12(b)/ OSHA/ CERCLA: Not Applicable

**California Proposition 65:** This product does not contain any Proposition 65 chemicals.

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#### STATE RIGHT TO KNOW

Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Listed	Listed	Listed	-	Listed

#### HMIS Rating

Health hazard	Chronic Health Hazard	Flammability	Physical Hazard
0	*	1	0

NFPA Rating				
Health Hazard	Fire Hazard	Reactivity Hazard		
0	1	0		

#### US DEPARTMENT OF TRANSPORTATION

REPORTABLE QUANTITY (RQ)	DOT MARINE POLLUTANT	DOT SEVER MARINE POLLUTANT
Νο	Νο	Νο

#### **U.S. DEPARTMENT OF HOMELAND SECURITY:** This product does not contain any DHS chemicals.

**Canada:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

#### This SDS complies with the requirements of Regulation (EC).

#### **SECTION 16 - OTHER INFORMATION**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Research Products International Corp. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. This product is sold for laboratory research and development purposes use only.





Creation Date 04-Jun-2009

Revision Date 03-Jan-2021

**Revision Number** 8

# SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

#### 1.1. Product identifier

<u>Sucrose</u> S/8560/53, S/8560/60, S/8560/63, S/8560/65 Saccharose 57-50-1 200-334-9 C12 H22 O11

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

#### 1.3. Details of the supplier of the safety data sheet

Company	<b>UK entity/business name</b> Fisher Scientific UK Bishop Meadow Road, Loughborough, Leicestershire LE11 5RG, United Kingdom
	<b>EU entity/business name</b> Acros Organics BVBA Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium
E-mail address	begel.sdsdesk@thermofisher.com
1.4. Emergency telephone number	Tel: 01509 231166 Chemtrec US: (800) 424-9300 Chemtrec EU: 001 (202) 483-7616

# SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the substance or mixture

CLP Classification - Regulation (EC) No 1272/2008

#### Physical hazards

Based on available data, the classification criteria are not met

#### Health hazards

#### Sucrose

Based on available data, the classification criteria are not met

#### Environmental hazards

Based on available data, the classification criteria are not met

Full text of Hazard Statements: see section 16

#### 2.2. Label elements

#### **Hazard Statements**

#### **Precautionary Statements**

#### 2.3. Other hazards

No information available

#### **SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

#### 3.1. Substances

Component	CAS-No	EC-No.	Weight %	CLP Classification - Regulation (EC) No 1272/2008
Sucrose	57-50-1	EEC No. 200-334-9	>95	-

#### Full text of Hazard Statements: see section 16

# **SECTION 4: FIRST AID MEASURES**

#### 4.1. Description of first aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Ingestion	Do NOT induce vomiting. Get medical attention.
Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration.
Self-Protection of the First Aider	No special precautions required.
4.2. Most important symptoms and e	effects, both acute and delayed

No information available.

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

Notes to Physician

Treat symptomatically.

# **SECTION 5: FIREFIGHTING MEASURES**

#### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons No information available.

#### 5.2. Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

#### Hazardous Combustion Products

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

#### 5.3. Advice for firefighters

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

### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

#### 6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.

#### 6.2. Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information.

#### 6.3. Methods and material for containment and cleaning up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

#### 6.4. Reference to other sections

Refer to protective measures listed in Sections 8 and 13.

### **SECTION 7: HANDLING AND STORAGE**

#### 7.1. Precautions for safe handling

Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Avoid dust formation.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash hands before breaks and after work.

#### 7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place.

#### Technical Rules for Hazardous Substances (TRGS) 510 Storage Class (LGK) Class 11 (Germany)

#### 7.3. Specific end use(s)

Use in laboratories

### **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

#### 8.1. Control parameters

#### Exposure limits

List source(s): **UK** - EH40/2005 Work Exposure Limits, Third edition. Published 2018. **IRE -** 2018 Code of Practice for the Chemical Agents Regulations, Schedule 1. Published by the Health and Safety Authority

Component	The United Kingdom	European Union	Ireland
Sucrose	STEL: 20 mg/m <sup>3</sup> 15 min		TWA: 10 mg/m <sup>3</sup> 8 hr.
	TWA: 10 mg/m <sup>3</sup> 8 hr		STEL: 20 mg/m <sup>3</sup> 15 min

#### Biological limit values

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

#### **Monitoring methods**

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.

MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust

#### Derived No Effect Level (DNEL) No information available

Route of exposure	Acute effects (local)	Acute effects (systemic)	Chronic effects (local)	Chronic effects (systemic)
Oral				
Dermal				
Inhalation				

**Predicted No Effect Concentration** No information available. **(PNEC)** 

#### 8.2. Exposure controls

**Engineering Measures** None under normal use conditions.

Personal protective equi Eye Protection	<b>ipment</b> Wear sa	fety glasses with side	e shields (or goggles	) (European standard - EN 166)
Hand Protection	Protectiv	e gloves		
Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber	See manufacturers	-		(minimum requirement)

Neoprene	recommendations	EN 374
Natural rubber		
PVC		
Skin and body prote	ection Wear appr	opriate protective gloves and clothing to prevent skin exposure

Inspect gloves before use.

Sucrose

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

<b>Respiratory Protection</b>	No protective equipment is needed under normal use conditions.
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced <b>Recommended Filter type:</b> Particle filter 2
Small scale/Laboratory use	Maintain adequate ventilation

Nc	С	info	orm	ati	on	avail	able.
Ν	1	10	lo info	lo inform	lo informati	lo information	lo information avail

# **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

#### 9.1. Information on basic physical and chemical properties

Physical State	Solid			
Appearance Odor Odor Threshold Melting Point/Range Softening Point Boiling Point/Range Flammability (liquid) Flammability (solid,gas) Explosion Limits	White Odorless No data available 190 - 192 °C / 374 - 377.6 °F No data available No information available Not applicable No information available No data available	Solid		
Flash Point Autoignition Temperature	No information available No data available	Method - No information available		
Decomposition Temperature pH Viscosity Water Solubility Solubility in other solvents	No data available 6.5-7.5 Not applicable 1970 g/l (15°C)	(10%) Solid		
Partition Coefficient (n-octanol/water)				
Component Sucrose Vapor Pressure Density / Specific Gravity Bulk Density Vapor Density Particle characteristics	log Pow -3.67 No information available No data available Not applicable No data available No data available	Solid		

9.2. Other information

Sucrose

Molecular Formula Molecular Weight Evaporation Rate C12 H22 O11 342.29 Not applicable - Solid

# **SECTION 10: STABILITY AND REACTIVITY**

10.1. Reactivity	None known, based on information available
10.2. Chemical stability	Stable under normal conditions.
10.3. Possibility of hazardous reacti	ons
Hazardous Polymerization Hazardous Reactions	Hazardous polymerization does not occur. None under normal processing.
10.4. Conditions to avoid	Incompatible products. Excess heat. Avoid dust formation.
10.5. Incompatible materials	Strong oxidizing agents.

#### 10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>).

### **SECTION 11: TOXICOLOGICAL INFORMATION**

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Product Information	See actual entry in RTECS for complete information.
(a) acute toxicity;	
Oral	Based on available data, the classification criteria are not met
Dermal	No data available
Inhalation	No data available

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sucrose	LD50 = 29700 mg/kg (Rat)	-	-

(b) skin corrosion/irritation; No data available

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- (d) respiratory or skin sensitization;<br/>RespiratoryNo data availableSkinNo data available
- (e) germ cell mutagenicity; No data available
- (f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

(g) reproductive toxicity;	No data available
(h) STOT-single exposure;	No data available
(i) STOT-repeated exposure;	No data available
Target Organs	No information available.
(j) aspiration hazard;	Not applicable Solid
Other Adverse Effects	The toxicological properties have not been fully investigated.
Symptoms / effects,both acute and delayed	No information available.
11.2. Information on other hazards	
Endocrine Disrupting Properties	Assess endocrine disrupting properties for human health. This product does not contain any

# **SECTION 12: ECOLOGICAL INFORMATION**

known or suspected endocrine disruptors.

12.1. Toxicity Ecotoxicity effects

Sucrose

Do not empty into drains.

# 12.2. Persistence and degradabilityProduct is biodegradablePersistencePersistence is unlikely.

12.3. Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Sucrose	-3.67	No data available

<u>12.4. Mobility in soil</u>	The product is water soluble, and may spread in water systems . Will likely be mobile in the environment due to its water solubility. Highly mobile in soils
12.5. Results of PBT and vPvB assessment	No data available for assessment.
<u>12.6. Endocrine disrupting</u> properties Endocrine Disruptor Information	This product does not contain any known or suspected endocrine disruptors
<u>12.7. Other adverse effects</u> Persistent Organic Pollutant Ozone Depletion Potential	This product does not contain any known or suspected substance This product does not contain any known or suspected substance

### **SECTION 13: DISPOSAL CONSIDERATIONS**

#### 13.1. Waste treatment methods

Waste from Residues/Unused Products	Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
Contaminated Packaging	Empty remaining contents. Dispose of in accordance with local regulations. Do not re-use empty containers.
European Waste Catalogue (EWC)	According to the European Waste Catalog, Waste Codes are not product specific, but application specific.
Other Information	Waste codes should be assigned by the user based on the application for which the product was used.

**SECTION 14: TRANSPORT INFORMATION** 

IMDG/IMO	Not regulated
<u>14.1. UN number</u> 14.2. UN proper shipping name 14.3. Transport hazard class(es) 14.4. Packing group	
ADR	Not regulated
<u>14.1. UN number</u> 14.2. UN proper shipping name 14.3. Transport hazard class(es) 14.4. Packing group	
ΙΑΤΑ	Not regulated
<u>14.1. UN number</u> 14.2. UN proper shipping name 14.3. Transport hazard class(es) 14.4. Packing group	
14.5. Environmental hazards	No hazards identified
14.6. Special precautions for user	No special precautions required
14.7. Maritime transport in bulk according to IMO instruments	Not applicable, packaged goods

# **SECTION 15: REGULATORY INFORMATION**

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

#### **International Inventories**

X = listed, Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), China (IECSC), Japan (ENCS), Australia (AICS), Korea (ECL).

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
Sucrose	200-334-9	-		Х	Х	-	Х	-	Х	Х	KE-1725
											8

# Regulation (EC) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of dangerous chemicals

Not applicable

#### **National Regulations**

WGK Classification

Water endangering class = 2 (self classification)

Component	Germany - Water Classification (VwVwS)	Germany - TA-Luft Class
Sucrose	WGK1	

UK - Take note of Control of Substances Hazardous to Health Regulations (COSHH) 2002 and 2005 Amendment

#### 15.2. Chemical safety assessment

A Chemical Safety Assessment/Report (CSA/CSR) has not been conducted

### **SECTION 16: OTHER INFORMATION**

#### Full text of H-Statements referred to under sections 2 and 3

#### Legend

CAS - Chemical Abstracts Service EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances PICCS - Philippines Inventory of Chemicals and Chemical Substances IECSC - Chinese Inventory of Existing Chemical Substances KECL - Korean Existing and Evaluated Chemical Substances	<ul> <li>TSCA - United States Toxic Substances Control Act Section 8(b) Inventory</li> <li>DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List</li> <li>ENCS - Japanese Existing and New Chemical Substances</li> <li>AICS - Australian Inventory of Chemical Substances</li> <li>NZIOC - New Zealand Inventory of Chemicals</li> </ul>
WEL - Workplace Exposure Limit ACGIH - American Conference of Governmental Industrial Hygienists DNEL - Derived No Effect Level RPE - Respiratory Protective Equipment LC50 - Lethal Concentration 50% NOEC - No Observed Effect Concentration PBT - Persistent, Bioaccumulative, Toxic	<ul> <li>TWA - Time Weighted Average</li> <li>IARC - International Agency for Research on Cancer</li> <li>Predicted No Effect Concentration (PNEC)</li> <li>LD50 - Lethal Dose 50%</li> <li>EC50 - Effective Concentration 50%</li> <li>POW - Partition coefficient Octanol:Water</li> <li>vPvB - very Persistent, very Bioaccumulative</li> </ul>
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code OECD - Organisation for Economic Co-operation and Development BCF - Bioconcentration factor Key literature references and sources for data https://echa.europa.eu/information-on-chemicals	ICAO/IATA - International Civil Aviation Organization/International Air Transport Association MARPOL - International Convention for the Prevention of Pollution from Ships ATE - Acute Toxicity Estimate VOC (volatile organic compound)

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

#### Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Creation Date	04-Jun-2009
Revision Date	03-Jan-2021
Revision Summary	Update to CLP Format.

Sucrose

# SAFETY DATA SHEET

# This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 COMMISSION REGULATION (EU) 2020/878 amending Annex II to Regulation (EC) No 1907/2006

Disclaimer

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

# **End of Safety Data Sheet**

Medina Agriculture Products Co. P.O. Box 309 4360 Highway 90 West Hondo, TX 78861 Ph:830-426-3011 Fax 830-426-2288

# CHEMTREC 24-HOUR EMERGENCY RESPONSE

TOLL FREE NUMBER: (800) 424-9300INTERNATIONAL CALLS: COLLECT (202) 483-7616CHEMTREC should only be contacted in the event of chemical emergenciesinvolving a spill, leak, fire, exposure, or accident involving chemicals.

**1. PRODUCT IDENTIFICATION** (Produced in U.S.A., Brazil & Mexico) **Product Name Synonyms** CAS No. Use None 8008-57-9 Medina Orange Oil Food and industrial applications **Other Names EINECS No.** UN No. FEMA No. FDA-GRAS List No. Orange Peel Oil 21 CFR 182-20 232-433-8 2319 2633 Cold Pressed Orange Oil

2. HAZARDS IDENTIFICATION Emergency Overview OSHA Hazards Combustible Liquid

#### **GHS Classification**

Flammable Liquids (Category 3) Skin irritation (Category 2)

GHS Label elements, including precautionary statements Pictogram



Hazardous Compo	onents % OSHA PEL ACGIH TLV
3. HAZARDOUS INGRE	DIENTS
Ingestion	May be harmful if swallowed.
Eyes	Causes eye irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Inhalation	May be harmful if inhaled. Causes respiratory tract irritation.
Potential Health Effects	
Reactivity	0
Fire	2
Health	2
NFPA Rating	
Physical hazards:	0
Flammability:	2
Health hazard:	2
LIMIC Classification	
Precautionary statement	None
Hazard statement(s) H226 H315	Flammable liquid and vapor. Causes skin irritation
Signal word	Warning



MEDINA ORANGE OIL				MAY 2013
D-Limonene	>95	N/A	N/A	N/A
Terpene Hydrocarbons	<3	N/A	N/A	N/A
Oxygenated Terpenes	<2	N/A	N/A	N/A

# 4. FIRST AID MEASURES

#### EMERGENCY AND FIRST AID PROCEDURES:

Skin Contact:	Wash affected area with copious amounts of soap and water.
Eye Contact:	Remove any contact lenses at once. Flush eyes well with large quantities of water
	for at least 15 min. See physician immediately.
Accidental	For small amounts, give milk of magnesia or a glass or two of water or milk. For
Ingestion:	large quantities, consult a physician.
Inhalation:	If symptoms of overexposure are experienced, evacuate to fresh air. If symptoms
	persist, seek medical attention.

# 5. FIRE & EXPLOSION HAZARD DATA

Flash Point: 113 to 121°F (45 to 49°C)

Identification No.: UN 2319

Extinguishing Media: Regular Foam, CO<sub>2</sub>, Dry Chemical (Class B) Flammable Limits (% by volume): Not Available

Special Fire Fighting Procedures and Equipment: Do NOT use water. As with any fire situation, full face, self-contained breathing apparatus and appropriate protective clothing should be worn. Under fire conditions, this product may release CO, CO<sub>2</sub>, smoke, and other decomposition products of undetermined hazard, but it is NOT an oxygen donor. Water is unsuitable for use on burning material, but may be used to cool containers exposed to heat. Incompatible with strong oxidizing agents.

NFPA Codes: Health: 1 Fire: 2 Reactivity: 0

(Degree of Hazard: 4=Extreme 3=High 2=Moderate 1=Slight 0=Insignificant)

# 6. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Use protective solvent resistant gloves to avoid skin contact. Small spills can be wiped up with vermiculite or other suitable absorbent material and removed to an approved disposal container. Large spills should be absorbed by dirt, sand, or other suitable absorbents for disposal. Do not hose spills down drains. Move leaking containers to well ventilated area. No Smoking. Eliminate any source of ignition. Avoid inhalation. Use NIOSH-approved respiratory protection device.

# 7. SPECIAL PRECAUTIONS

Handling and Storage Precautions: Store in closed containers away from heat or sources of ignition and oxidizing materials. Protect against physical damage to containers. Avoid inhalation and contact with skin and eyes.

Other Precautions: Do not dispose of solvent or oil-soaked combustible materials (rags, paper, etc.) in an open container or trash can. Place rags in approved waste cans or soak with water.

# 8. OCCUPATIONAL PROTECTIVE MEASURES

Respiratory Protection:	Not normally needed in well ventilated areas. If vapor concentration is
	high, use NIOSH-approved respiratory protection device.
Ventilation:	General mechanical ventilation (to reduce fumes).
Protective Gloves:	Neoprene or Rubber.
Eye Protection:	OSHA-approved safety glasses with side shields.
Other Protective Equipment:	Eye bath and safety shower.

### MEDINA ORANGE OIL

### MAY 2013

Work/Hygienic Practices:

Good personal hygiene practices should be used. Wash after any contact, before eating, and at the end of the work period.

# 9. PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: (763 mm Hg)	347.9 to 352.4°F (175.5 to 178°C)	Odor:	Pungent Orange Aroma
Vapor Pressure (mm Hg @ 14°C)	1.0mmHg	Melting Point/Range:	-89°C to -96.9°C
Specific Gravity: (@ 20 to 25°C)	0.838 to 0.850 g/ml	Refractive Index: (@ 20°C)	1.472
Vapor Density: (Air = 1)	4.73	Evaporation Rate: (Ether = 1)	<1.0
Volatile fraction by weight:	100%	Solubility in Water:	Negligible
Viscosity @ 20°C:	1.28 cST	Heat of Combustion:	1.471 Kcal/mol
Aniline Point:	-15°C	Surface Tension: (@ 22°C)	25 mN m <sup>-1</sup>

10. REACTIVITY DATA Stability: Hazardous Decomposition	Stable under ordinary conditions of use and storage.
Products:	Burning produces Carbon Monoxide and/or Carbon Dioxide.
Hazardous Polymerization:	Will not occur.
Incompatibilities:	Avoid strong oxidizing agents. Avoid exposure to sparks, heat and flames.

### **11. HEALTH HAZARD DATA**

Carcinogenicity: N/A	NTP: TR347	<b>OSHA:</b> Combustible Liquid	IARC: N/A			
Signs & Symptoms of Acute & Chronic						
Exposure:		Eye, skin and mucous membrane irri	tation			
Primary Routes of Entry	y:	Inhalation and Absorption				
Medical Conditions Age	gravated:	Eye, skin and upper respiratory inflammation.				
Acute Effects:		LD <sub>50</sub> , Oral (rat): 4,400 mg/kg.				
		LD <sub>50</sub> , Dermal (rabbit): >2,000 mg/kg.				
		LD <sub>50</sub> , Dermal (mice): 5,600 to 6,600 r	ng/kg.			
Permissable Exposure	Concentration:	for d-Limonene Sax Quotes:				
		LPR-Mus TD <sub>Lo</sub> : 4800 mg/kg/8W-I: E1	ΓA			
		ORL-Mus TD <sub>Lo</sub> : 67 mg/kg/39W-I: E	ГА			
EMERGENCY AND FIRS	ST AID PROCEDU	RES:				
Skin Contact:	Wash affected are	ea with copious amounts of soap and w	vater.			
Eye Contact:	Remove any conta	act lenses at once. Flush eyes well wit	h large quantities of			
	water for at least 1	5 min. See physician immediately.				
Accidental Ingestion:	For small amounts	s, give milk of magnesia or a glass or t	wo of water or milk. For			
-	large quantities, co	onsult a physician.				
Inhalation:	If symptoms of over	erexposure are experienced, evacuate	to fresh air. If			
	symptoms persist,	seek medical attention.				

# **12. ECOLOGICAL INFORMATION**

"Marine Pollutant: Classified as slight hazard for water WGK-1 (self statement)"

### MEDINA ORANGE OIL

Ecotoxicity: Fish Toxicity:	LC-0 = 26  mg/l
	LC-50 = 33 mg/l
	LC-100=43 mg/l
	Daphnia toxicity: not available
	Alga toxicity: not available
	Earthworm toxicity: not available
	Plant toxicity: not available
Ozone Depletion Potential:	Zero stratospheric
Global Warming Potential:	Zero
Photodegradability:	Atmospheric half-life = c.a. 1 hour.
	(Note: d-Limonene, in common with other terpenes, represent a major sink for the undesirable troposheric ozone, removing the smog-forming catalyst nitrogen oxides and consuming ozone at an increased rate at night. While the material is photoreactive, the benefits of removing ozone and nitrogen oxides outweigh the negative with hydroxyl radical)
Biodegradability:	d-Limonene is a biodegradable solvent occurring in nature as the main component of peel oil. <b>100% in 28 days</b>
Bio-Accumulation:	Not available
Other Data:	Chemical oxygen demand: 2.850 gO <sub>2</sub> /l or 3.280 gO <sub>2</sub> /kg

# **13. DISPOSAL CONSIDERATIONS**

**Waste Handling & Disposal Method:** Dispose of in accordance with Federal, State and Local environmental regulations. In most cases land fill or incineration would apply. There are no uniform EC regulations for the disposal of chemicals or residues. Chemical residues generally are applied as "special waste." We recommend that you contact either the authorities in charge or approved waste companies which will advise you on how to dispose of special waste. Do not allow to enter drinking water supplier, waste water or soil without municipal authorization.

# 14. REGULATORY STATUS

1) FDA & FEMA list orange oil which is 95%+ d-Limonene as GRAS - Generally Regarded As Safe.

2) NTP, OSHA, and IARC do NOT list product as carcinogenic to humans.

3) Unused product is <u>NOT</u> listed by EPA as hazardous waste (40 CFR part 26 IQ).

4) d-Limonene is <u>NOT</u> listed on California's Prop. 65 toxic substance list.

5) d-Limonene is listed on EPA's Chemical Inventory, PL94-469; however, <u>NOT</u> on EPA's CORR (Chemicals or Regulatory Rules) list, which contains those materials which pose a health or environmental

risk.

6) d-Limonene does <u>NOT</u> contain lead, cadmium, mercury, or hexavalent chromium or come into contact with these chemicals since it is a citrus derived by-product oil produced by steam distillation.

7) The components of this product are included on the EPA TSCA Chemical Substance Inventory.

8) The components of this product are included on Canada's Domestic Substance List (DSL).

DOT shipping name UN1169, extracts, aromatic, liquid, 3, III

# **15. OTHER INFORMATION**

**VOC INFORMATION:** Since orange oil is categorized as an essential oil, it is excluded from VOC regulation. However, when it is categorized as a solvent, orange oil is reportable as 95% VOC (850 grams per liter, 6.81 lbs. per gallon).

ASTM D1364:	<0.1% Water
EPA 24 DENSITY:	0.8422 Kg/L Density

### **MEDINA ORANGE OIL**

# MAY 2013

The information contained herein is based on data considered to be accurate and reliable. No warranty is expressed or implied regarding the accuracy or correctness of this data. It is the user's obligation to determine the safe use of the product since conditions of use, handling, storage and disposal are beyond our control.

# 16. REFERENCES

- 1. R.J. Braddock, F. Temell and K.R. Cadwallader, Citrus Essential Oils-1986
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- 3. Official Journal of the European Communities
- 4. Merck Index-Tenth Edition-1983
- 5. Citrus Florida Oils (156-157)
- 6. Different Customers
- 7. The Essential Oils-Ernest Guenter-1975
- 8. R.J. Braddock-Handbook of Citrus By-Products and Processing Technology-Chapter 12-1999

effective 4/2016