

**SAFETY DATA SHEET****Fructose**

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Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation") and REGULATION (EC) No 1272/2008 (CLP)

Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**1.1 Product identifier****Product name:** Fructose**Chemical name (e.g. IUPAC name):** Fructose**Trade Name:** Fructose; Fruit Sugar; Levulose**Chemical formula:** C₆H₁₂O₆**Product type:** Solid (crystals)**CAS number:** 57-48-7**EC number:** 200-333-3**REACH registration no(s):****1.2 Relevant identified uses of the substance or mixture and uses advised against****1.3 Details of the supplier of the safety data sheet****Company/undertaking identification****Supplier/Manufacturer:** Gadot Biochemical Industries Ltd

117 Hahistadrut Ave

P.O.B 10636

Haifa Bay 26118

Israel

Tel: +972-4-8461555

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E-mail address of person responsible for this MSDS:

Nissim Guigui - R&D and Quality Manager

nissim@gadotbio.com

E-mail address of person responsible for this SDS: www.gadotbio.com**1.4 Emergency telephone number****Emergency telephone number (including hours of operation):** +972-4-8461555**Section 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Classification in accordance to Regulation(EC) No. 1272/2008 (CLP/GHS)**

Product name	GHS Classification
Fructose	-

Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC

Product name	EU Classification
Fructose	-

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2.2 Label elements

Labeling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms: Not classified

Signal word: Not required

Hazard statements: Not classified

Precautionary Statements: Not classified

2.3 Other hazard

Substance meets the criteria for BBT according to Regulation (EC) No. 1907/2006, Annex XIII:

Not applicable

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII:

Not applicable

Other hazard which do not result in classification:

Not applicable

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation:

Product/ Ingredient name	Identifiers	%	EU Classification	GHS Classification
Fructose	CAS number: 57-48-7 EC number: 200-333-3 REACH registration no(s):	100	-	-

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.

See section 16 for the full text of the H-statements and R-phrases declared above.

Section 4. FIRST AID MEASURES**4.1 Description of first aid measures**

Eyes contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately if irritation develops or persists or if visual changes occur.

Skin contact: In case of contact, immediately wash with plenty of water. Remove contaminated clothing and shoes. Get medical attention.



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Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is Difficult, give oxygen. Get medical attention.
Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give Anything by mouth to an unconscious person. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eyes contact: May cause irritation to eyes. Symptoms may include reddening.

Inhalation: May cause irritation to the respiratory tract. Symptoms may include breathing difficulties.

Ingestion: May cause gastrointestinal irritation.

Skin contact: May cause irritation to skin. Symptoms may include itching, scaling, reddening, inflammation or occasionally blistering.

Over-exposure sign/symptoms:

Eyes contact: No specific data

Inhalation: No specific data

Ingestion: No specific data

Skin contact: No specific data

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote, medical staff contacts Poisons Information Center. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Special treatments: No specific treatment

Section 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Small fire: use dry chemical powder.

Large fire: use water spray, fog or foam.

Not suitable: Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazardous thermal decomposition products: Under fire – carbon oxides (CO, CO₂)

5.3 Advice for firefighters

Special protective equipment for fire fighters: Fire fighters should wear full protective clothing and self-contained breathing apparatus in positive pressure mode.

Remark: Move containers from fire area if possible to do so without risk.



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Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing. Ventilate area of spill.

6.2 Environmental precautions

Do not let this chemical enter the environment. Keep away from drains, surface and ground water.

6.3 Methods and materials for containment and cleaning up

Small spill: Use a tool to scoop up solid material and place into an appropriate labeled waste container.

Do not mix with sawdust or other combustible material. Avoid creating dusty conditions and prevent wind dispersal. Keep out of waterways.

Large spill: As for small spill

Personal Protection in Case of Large Spill: Safety glasses. Full suit. Suitable respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product.

6.4 Reference to other sections

See Sections 1 for emergency contact information

See Section 8 for information on a appropriate personal protective equipment

See Section 13 for additional waste treatment information

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Handling: Minimize dust generation and accumulation. Do not breathe dust. Avoid contact with skin and eyes. Wash thoroughly after handling. Do not permit eating/drinking/smoking near the material.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information measures.

7.2 Conditions for safe storage, including any incompatibilities

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

Do not store together with oxidizing agents. Keep away from heat.

Packaging materials Recommended: Use original container.

7.3 Specific end use(s): N/A

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values: N/A

Derived effects levels:

Recommended occupational and consumer exposure limit values (following from the preformed CSA): N/A

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8.2 Exposure controls**Engineering Measures**

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

Person Protective measures**Occupational exposure controls:**

Respiratory protection: Dust respirator. Be sure to use an approved/certified or equivalent. Wear appropriate respirator when ventilation is inadequate.

Eye/face protection: Wear protective safety goggles.

Skin protection:

Hand protection: Wear protective disposable vinyl gloves to prevent skin exposure.

Other: Wear appropriate long-sleeved clothing to minimize skin contact.

Hygiene measures: Keep away from foodstuffs and beverages. Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Clean skin thoroughly after work; apply skin cream. During use, provide suitable ventilation.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**9.1 Information on basic physical and chemical properties**

Appearance: Solid crystals, white

Odour: N/A

Odour threshold: N/A

pH: N/A

Melting point/Freezing point: N/A

Initial boiling point/boiling range: N/A

Flash point: N/A

Evaporation rate: N/A

Flammability: N/A

Upper/lower flammability or explosive limits: N/A

Vapor pressure: N/A

Vapor density: N/A

Relative Density: N/A

Solubility(ies): N/A

Partition coefficient Octanol/Water: N/A

Auto-ignition temperature: 360°C

Decomposition temperature: N/A

Viscosity: N/A



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Explosive properties: N/A

Oxidizing properties: N/A

9.2 Other information:

Molecular weight: 180.16 g/mol

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients

10.2 Chemical stability

The product is stable under normal handling and storage conditions described in Section 7.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

N/A

10.5 Incompatible materials

Oxidizing agents.

10.6 Hazardous Decomposition products:

Under fire - oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: N/A

Irritation and corrosivity:

Eyes contact: May cause irritation to eyes. Symptoms may include reddening.

Inhalation: May cause irritation to the respiratory tract. Symptoms may include breathing difficulties.

Ingestion: May cause gastrointestinal irritation.

Skin contact: May cause irritation to skin. Symptoms may include itching, scaling, reddening, inflammation or occasionally blistering.

Sensitization: N/A

Chronic toxicity:

Carcinogenicity: According to the manufacturer, this material is not known to cause cancer in animals or humans.

Mutagenicity: N/A



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Reproductive toxicity: N/A

Specific target organ toxicity (single exposure): N/A

Specific target organ toxicity (repeated exposure): N/A

Aspiration hazard: N/A

Other effects

Over exposure signs/symptoms: N/A

Target organs: N/A

Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

According to the manufacturer, the product itself and its products of degradation are not toxic.

12.2 Persistence and Degradability

Not available

12.3 Bioaccumulative potential

Not available

12.4 Mobility in soil

Soil/water partition coefficient (Koc) : N/A

12.5 Results of PBT and vPvB assessment

Not available

12.6 Other adverse effects

Substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, COD, etc.: N/A

Substances, which contribute to eutrophication: N/A

Section 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Hazardous waste: N/A

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Section 14: TRANSPORT INFORMATION**International transport regulations**

Regulatory Information	14.1 UN number	14.2 Proper shipping name	14.3 Classes	14.4 Packing group	14.5 Environmental hazard	14.6 Special precautions for user	Additional information
ADR/RID Class	Not Regulated	-	-	-	-	-	-
ADNR Class	Not Regulated	-	-	-	-	-	-
IMDG class	Not Regulated	-	-	-	-	-	-
IATA class	Not Regulated	-	-	-	-	-	-

14.7 Transport to bulk according to Annex II of MARPOL 79/78 and the IBC Code

Not applicable

Section 15: REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

EU Directives 67/548/EEC and 1999/45/EC (including amendments) and take into account the intended product use

EU Regulation(EC) No.1907/2006 (REACH), No 1272/2008 (CLP)

15.2 Chemical safety assessment

In accordance with REACH article 14, a Chemical Safety Assessment has been carried out for this substance.

Section 16: OTHER INFORMATION**Full text of R-phrases referred to in sections 2 and 3:** N/A**Safety phrases:** N/A**Full text of Hazards Statements referred to in sections 2 and 3:** N/A**Precautionary Statements:** N/A**Training advice:** Before using/handling the product one must read carefully present MSDS.**Recommended restriction:** N/A

Key Legend Information:

ACGIH- American Conference of Governmental Industrial Hygienists



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OSHA- Occupational Safety and Health Administration

NTP- National Toxicology program

IARC- International Agency for Research on Cancer

ND- Not Determined

N/A- Not available

R-phrases- Risk phrases

S-phrases- Safety phrases

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To the best of our knowledge the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.