Material Safety Data Sheet
Glycogen

MSDS# 92044

Section 1 - Chemical Product and Company Identification

MSDS Name: Glycogen
Catalog Numbers: 61203-0050
Synonyms: Animal starch; Liver starch.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticaalanaan 3a
2440 Geel, Belgium
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call:
800-ACROS-01
For information in Europe, call:
+32 14 57 52 11
Emergency Number, Europe:
+32 14 57 52 99
CHEMTREC Phone Number, US:
800-424-9300
CHEMTREC Phone Number, Europe:
703-527-3887

Section 2 - Composition, Information on Ingredients

<table>
<thead>
<tr>
<th>CAS#</th>
<th>9005-79-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>D-Glycogen</td>
</tr>
<tr>
<td>%</td>
<td>ca. 100</td>
</tr>
<tr>
<td>EINECS#</td>
<td>232-683-8</td>
</tr>
</tbody>
</table>

Hazard Symbols: None listed
Risk Phrases: None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Caution! This is expected to be a low hazard for usual industrial handling. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. Target Organs: None known.

Potential Health Effects

Eye: May cause eye irritation.
Skin: May cause skin irritation. Low hazard for usual industrial handling.
Ingestion: May cause irritation of the digestive tract. Low hazard for usual industrial handling.
Inhalation: May cause respiratory tract irritation. Low hazard for usual industrial handling.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, get medical aid.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water. Wash mouth out with water. Get medical aid if irritation or symptoms occur.
Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Dusts at sufficient concentrations can form explosive mixtures with air. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use agent most appropriate to extinguish fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Autoignition Temperature: Not applicable.
Flash Point: Not applicable.

Explosion Limits:
Lower: Not available
Upper: Not available

NFPA Rating: health: 1; flammability: 1; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before handling: reuse. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Use with adequate ventilation.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. No special precautions indicated.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-Glycogen</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: D-Glycogen: None listed

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

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.

Clothing: Wear appropriate protective clothing to minimize contact with skin.
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a Respirators: NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Powder
Color: white  
Odor: none reported  
PH: Not available  
Vapor Pressure: Negligible.  
Vapor Density: Not available  
Evaporation Rate: Negligible.  
Viscosity: Not available  
Boiling Point: Decomposes  
Freezing/Melting Point: 255 deg C (491.00°F)  
Decomposition Temperature:  
Solubility in water: Not available  
Specific Gravity/Density:  
Molecular Formula: C6H10O5N  
Molecular Weight: 176.0737  

Section 10 - Stability and Reactivity  

Chemical Stability: Stable under normal temperatures and pressures.  
Conditions to Avoid: Incompatible materials, dust generation, excess heat.  
Incompatibilities with Other Materials: Not available  
Hazardous Decomposition Products: Carbon monoxide, carbon monoxide, carbon dioxide.  
Hazardous Polymerization: Has not been reported.  

Section 11 - Toxicological Information  

RTECS#: CAS# 9005-79-2: MC2700000  
LD50/LC50: RTECS: Not available.  
Carcinogenicity: D-Glycogen - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
Other: See actual entry in RTECS for complete information.  

Section 12 - Ecological Information  

Not available  

Section 13 - Disposal Considerations  

Dispose of in a manner consistent with federal, state, and local regulations.  

Section 14 - Transport Information  

US DOT  
Shipping Name: Not regulated as a hazardous material  
Hazard Class:  
UN Number:  
Packing Group:  
Canada TDG  
Shipping Name: Not available  
Hazard Class:  
UN Number:  
Packing Group:  

Section 15 - Regulatory Information  

European/International Regulations  
European Labeling in Accordance with EC Directives  
Hazard Symbols: Not available  
Risk Phrases:  
Safety Phrases:  
S 24/25 Avoid contact with skin and eyes.  

WGK (Water Danger/Protection)
Canada

CAS# 9005-79-2 is listed on Canada's DSL List
Canadian WHMIS Classifications: Not available
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 9005-79-2 is not listed on Canada's Ingredient Disclosure List.

US Federal
TSCA

CAS# 9005-79-2 is listed on the TSCA Inventory.

Section 16 - Other Information
MSDS Creation Date: 11/07/2001
Revision #4 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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