Material Safety Data Sheet
Theobromine

MSDS# 97168

Section 1 - Chemical Product and Company Identification

MSDS Name: Theobromine
Catalog Numbers: AC258820000, AC258820010, AC258820250, AC258821000, AC258822500, AC420800000, AC420800000, AC420801000, ACE1132406
Synonyms: 3,7-Dimethyl-xanthine; 2,6-Dihydroxy-3,7-dimethyl-purine.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticaalna 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
Emergency Number US: 201-796-7100
CHEMTREC Phone Number, US: 800-424-9300
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 83-67-0
Chemical Name: Theobromine
%
EINECS#: 201-494-2

Hazard Symbols: XN

Risk Phrases: 22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Warning! Harmful if swallowed. Target Organs: None known.

Potential Health Effects
Eye: May cause eye irritation.
Skin: May cause skin irritation. May be harmful if absorbed through the skin.
Ingestion: Harmful if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea.
Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.
Skin: Immediately 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.

Ingestion: Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Get medical aid. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

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.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

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

Explosion Limits: Lower: Not available
Upper: Not available

NFPA Rating: health: 2; 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. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Store in a tightly closed container.

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>Theobromine</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>

OSHA Vacated PELs: Theobromine: 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.

Respirators: 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 respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Powder
Color: white
Odor: None reported.

pH: Not available

Vapor Pressure: Not available

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: Not available

Freezing/Melting Point: 290 - 295 deg C

Decomposition Temperature: Not available

Solubility in water: slightly soluble

Specific Gravity/Density: Not available.

Molecular Formula: C7H8N4O2

Molecular Weight: 180.17

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation.

Incompatibilities with Other Materials Strong oxidizing agents.

Hazardous Decomposition Products Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 83-67-0: XH2275000

RTECS: CAS# 83-67-0:

LD50/LC50: Oral, mouse: LD50 = 837 mg/kg;
Oral, rat: LD50 = 1265 mg/kg;

Carcinogenicity: Theobromine - IARC: Group 3 (not classifiable)

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Other: Do not empty into drains.

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 regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN

Risk Phrases:
R 22 Harmful if swallowed.

Safety Phrases:
S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 83-67-0: 1

Canada

CAS# 83-67-0 is listed on Canada's DSL List

Canadian WHMIS Classifications: D1B

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# 83-67-0 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 83-67-0 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 7/12/1999

Revision #7 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.