Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Gemfibrozil

STATEMENT OF HAZARDOUS NATURE

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY:
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C15-H22-O3, “valeric acid, 2, 2-dimethyl-5-(2, 5-xylyloxy)-”, “5-(2, 5-dimethylphenoxy)-2, 2-dimethylpentanoic acid”, “2, 2-dimethyl-5-(xylyloxy)valeric acid”, “pentanoic acid, 5-(2, 5-dimethylphenoxy)-2, 2-dimethyl-“, CI-719, Jezil, Gen-Fibro, Lopid, antihyperlipoproteinemic, “lipid regulating agent”

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability:</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Toxicity:</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Body Contact:</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Reactivity:</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Chronic:</td>
<td>2</td>
<td></td>
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</tbody>
</table>

CANADIAN WHMIS SYMBOLS

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>FLAMMABILITY</td>
<td></td>
</tr>
<tr>
<td>HEALTH HAZARD</td>
<td></td>
</tr>
<tr>
<td>INSTABILITY</td>
<td></td>
</tr>
</tbody>
</table>

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4
EMERGENCY OVERVIEW

RISK
Harmful if swallowed.
Possible risk of impaired fertility.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

EYE
■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.

SKIN
■ Skin contact is not thought to produce harmful health effects (as classified using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.

INHALED
■ The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified using animal models). Nevertheless, adverse effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS
■ Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.
■ There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Gemfibrozil was tested for carcinogenicity by oral administration in the diet of rats and mice. There was a slight, not dose-related increase in the incidence of hepatocellular tumours, interstitial cell tumours of the testes and adrenal phaeochromocytomas.
There are a number of case reports of reversible impotence in men treated with gemfibrozil.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>gemfibrozil</td>
<td>25812-30-0</td>
<td>&gt;98</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

SWALLOWED
■ IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. ■ Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

EYE
■ If this product comes in contact with the eyes: ■ Wash out immediately with fresh running water. ■ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN
■ If skin or hair contact occurs: ■ Flush skin and hair with running water (and soap if available). ■ Seek medical attention in event of irritation.

INHALED
■ If fumes or combustion products are inhaled remove from contaminated area. ■ Other measures are usually unnecessary.

NOTES TO PHYSICIAN
■ for poisons (where specific treatment regime is absent):

-----------------------------------------------------------------------------------------------------
--------------BASIC TREATMENT
· Establish a patent airway with suction where necessary.
· Watch for signs of respiratory insufficiency and assist ventilation as necessary. Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour Pressure (mmHg)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not available</td>
</tr>
</tbody>
</table>

EXTINGUISHING MEDIA
- Foam.
- Dry chemical powder.

FIRE FIGHTING
- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
- Combustible solid which burns but propagates flame with difficulty.
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), other pyrolysis products typical of burning organic material. May emit poisonous fumes.

FIRE INCOMPATIBILITY
- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION
- Glasses: Chemical goggles.
- Gloves:
- Respirator: Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.
- Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
- Dampen with water to prevent dusting before sweeping.
- Place in suitable containers for disposal.

MAJOR SPILLS
- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS
- Glass container.
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS
- Store in original containers.
Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS
The following materials had no OELs on our records
• gemfibrozil: CAS:25812-30-0

PERSONAL PROTECTION

RESPIRATOR
Particulate
Consult your EHS staff for recommendations

EYE

- When handling very small quantities of the material eye protection may not be required.
  For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:
  - Chemical goggles
  - Face shield. Full face shield may be required for supplementary but never for primary protection of eyes
  - Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

- Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
  - frequency and duration of contact,
  - chemical resistance of glove material,
  - glove thickness and
  - dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
  - When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
  - When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
  - Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
  - Rubber gloves (nitrile or low-protein, powder-free latex). Employees allergic to latex gloves should use nitrile gloves in preference.
  - Double gloving should be considered.
  - PVC gloves.
  - Protective shoe covers.
  - Head covering.
Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.
  - polychloroprene
  - nitrile rubber
  - butyl rubber
  - fluorocautchouc
  - polyvinyl chloride
Gloves should be examined for wear and/ or degradation constantly.

OTHER

- For quantities up to 500 grams a laboratory coat may be suitable.
- For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.
- For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
- For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.
  - Eye wash unit.
  - Ensure there is ready access to an emergency shower.
  - For Emergencies: Vinyl suit.

ENGINEERING CONTROLS

- Enclosed local exhaust ventilation is required at points of dust, fume or vapor generation.
HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapors.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid. Does not mix with water.

<table>
<thead>
<tr>
<th>State</th>
<th>Divided solid</th>
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</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
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<table>
<thead>
<tr>
<th>Melting Range (°F)</th>
<th>141.8 - 145.4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Boiling Range (°F)</th>
<th>316.4 - 318.2 (0.02mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in water (g/L)</td>
<td>Partly miscible</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Flash Point (°F)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>pH (1% solution)</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Decomposition Temp (°F)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Vapour Pressure (mmHG)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Explosive Limit (%)</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity (water=1)</td>
<td>Not available</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lower Explosive Limit (%)</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Vapor Density (air=1)</td>
<td>Not Applicable</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Volatile Component (%vol)</th>
<th>Negligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

APPEARANCE
Crystalline solid; does not mix well with water.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

GEMFIBROZIL

TOXICITY AND IRRITATION

GEMFIBROZIL:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

<table>
<thead>
<tr>
<th>TOXICITY</th>
<th>IRRITATION</th>
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</thead>
<tbody>
<tr>
<td>Oral (rat) LD50: 4786 mg/kg</td>
<td>Nil Reported</td>
</tr>
<tr>
<td>Oral (mouse) LD50: 3162 mg/kg</td>
<td></td>
</tr>
</tbody>
</table>

- The substance is classified by IARC as Group 3:
  - NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Fibrates are a class of amphiphilic carboxylic acids. They are used for a range of metabolic disorders, mainly hypercholesterolaemia (high cholesterol), and are therefore hypolipidaemic agents.

Fibrates are agonists of the PPAR-a receptor in muscle, liver, and other tissues. Activation of PPAR-a signaling results in:

- Increased beta-oxidation in the liver
- Decreased hepatic triglyceride secretion
- Increased lipoprotein lipase activity, and thus increased VLDL (Very Low Density Lipoprotein) clearance
- Increased HDL (High Density Lipoprotein)
- Increased clearance of remnant particles

Most fibrates can cause mild stomach upset and myopathy (muscle pain with CPK elevations). Since fibrates increase the cholesterol content of bile, they increase the risk for gallstones.

In combination with statin drugs, fibrates cause an increased risk of rhabdomyolysis, idiosyncratic destruction of muscle tissue, leading to renal failure. A powerful statin drug, cerivastatin (Lipobay), was withdrawn because of this complication. The less lipophilic statins are less prone to cause this reaction, and are probably safer when combined with fibrates.

Fibrates are structurally and pharmacologically related to the thiazolidinediones, a novel class of anti-diabetic drugs that also act on PPARs (more specifically PPARγ).

Adverse clinical effects have been reported for 7% of the exposures to thiazolidinediones, the most frequent of which were hypoglycemia (2%), hyperglycaemia (1%), and drowsiness (1%).

Oedema is an adverse event associated with thiazolidinedione therapy. The potential for mild-to-moderate peripheral oedema with
thiazolidinedione is known, especially in patients who have heart failure or use insulin. Vary rarely, reports of new onset or worsening (diabetic) macular oedema with decreased visual acuity have been reported with the use of thiazolidinediones. Subcutaneous benign adipose tissue tumours (lipomas) have been observed in rats treated with thiazolidinedione drugs, and are probably related to the pharmacodynamic activity of this drug class. Urinary bladder tumours were probably secondary to formation of urinary calculi, and are unlikely to pose a carcinogenic risk in humans.

**CARCINOGEN**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>US Environmental Defense Scorecard</th>
<th>Reference(s)</th>
<th>P65</th>
</tr>
</thead>
<tbody>
<tr>
<td>gemfibrozil</td>
<td>Recognized Carcinogens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gemfibrozil</td>
<td>Suspected Carcinogens</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Section 12 - ECOLOGICAL INFORMATION

**Ecotoxicity**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
<th>Bioaccumulation</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>gemfibrozil</td>
<td>HIGH</td>
<td>LOW</td>
<td>MED</td>
<td></td>
</tr>
</tbody>
</table>

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations. Puncture containers to prevent re-use and bury at an authorized landfill. Legislation addressing waste disposal requirements may differ by country, state and/or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

Recycle wherever possible. Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

gemfibrozil (CAS: 25812-30-0) is found on the following regulatory lists;
"Canada Domestic Substances List (DSL),"International Agency for Research on Cancer (IARC) - Agents Reviewed by the IARC
Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Limited evidence of a carcinogenic effect*.
  * (limited evidence).

ND
Substance CAS Suggested codes gemfibrozil 25812-30-0

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- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.

- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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