



# MATERIAL SAFETY DATA SHEET

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## SECTION 1 – CHEMICAL IDENTIFICATION

Trade Name: 4-(4-fluorobenzoyl)butyric acid Date of Issue: July 23, 1999  
Formula: C<sub>11</sub>H<sub>11</sub>FO<sub>3</sub> Revised Date: September 24, 2002  
Chemical Family: Carboxylic Acid  
Telephone Number: Information (281) 474-3271  
**Emergency Number: Chemtrec (800) 424-9300**

HMIS Hazard Rating 4 = Extreme  
Health: 2 3 = High  
Fire: 1 2 = Moderate  
Reactivity: 0 1 = Slight  
PPE rating to be supplied by user 0 = Least  
depending on use conditions.

## SECTION 2 – COMPOSITION

<u>Components</u>	<u>Percentage</u>	<u>TLV</u>	<u>CAS #</u>
4-(4-fluorobenzoyl)butyric acid	>95	N.E.	149437-76-3

Note: N.E. = Not Established N/A = Not Applicable

## SECTION 3 – HAZARDS IDENTIFICATION

**CAUTION: Pharmaceutical intermediate intended for manufacturing use only. The long-term toxicological properties of this product are not fully known at this time. Avoid ingestion, inhalation, skin and eye contact.**

Eye Contact: N.E. Product may be capable of causing irritation, redness, pain, and tearing. Corneal injury and burns may also be possible.

Skin Contact: N.E. No evidence of irritation or sensitization.

Inhalation: N.E.

Ingestion: N.E.

## SECTION 4 – FIRST AID MEASURES

Eye Contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention.  
Skin Contact: Immediately remove contaminated clothing and shoes. Wipe excess material from

skin and flush with water for at least 15 minutes. Use soap if available or follow by washing with soap and water. Do not reuse contaminated clothing without laundering. If irritation persists, seek medical advice.

Inhalation: Remove victim to fresh air. If breathing is difficult, give oxygen. If not breathing, administer artificial respiration. Get medical attention.

Ingestion: Get medical attention immediately.

## **SECTION 5 – FIREFIGHTING MEASURES**

Extinguishing Media: Use water, dry chemical, or carbon dioxide (CO<sub>2</sub>).

Special Firefighting: Firefighters should wear NIOSH approved self-contained breathing apparatus.  
Procedures/Precautions: Responders should wear protective clothing to prevent skin contact. Move containers from fire area. If unable to move, cool sealed containers with water.

Unusual Fire and Explosion Information: May release toxic vapors when burning.

Environmental Note: Toxic to aquatic organisms.

## **SECTION 6 – ACCIDENTAL RELEASE MEASURES**

Contain and recover. Due to dust explosively data, dry methods are not recommended. Wet methods and / or a HEPA vacuum are recommended for clean up. This material presents a severe dust explosion hazard. Prevent from entering sewers and waterways. Clean-up personnel should wear protective equipment to prevent contact.

## **SECTION 7 – HANDLING AND STORAGE**

Because this material presents a severe dust explosion hazard, containers should be grounded and/or bonded when material is transferred. Store in a cool, dry place. Keep away from heat, sparks, and flames.

## **SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION**

Respiratory Protection: NIOSH approved respiratory protection.

Ventilation: Utilize local exhaust to control high dust concentrations in confined areas.

Protective Gloves: Utilize appropriate impervious chemical gloves.

Eye Protection: Chemical goggles and possibly a face shield. Have eyewash facilities readily available.

Other Protective Equipment: Wear additional protective clothing to prevent skin contact. This may include chemical resistant boots and chemical resistant suits.

Work Practices: Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Promptly remove soiled clothing and wash thoroughly before reuse. Shower after work using plenty of soap and water.

**SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES**

Boiling Point:	N/A.
Melting Point:	142°C (288°F)
Volatility/Vol (%):	0%
Vapor Pressure (mm Hg):	N.E.
Vapor Density (Air = 1):	N/A.
Solubility in H <sub>2</sub> O:	Minimal at 25°C ( 77°F).
Appearance/Odor:	White to cream colored powder.
Specific Gravity (H <sub>2</sub> O = 1):	N.E.
Evap. Rate (Butyl Acetate = 1):	N.E.
Flash Point:	N/A.
Lower Explosive Limit:	N/A.
Upper Explosive Limit:	N/A.
Autoignition Temperature:	N.E.

**SECTION 10 – STABILITY AND REACTIVITY**

Chemical Stability:	Stable.
Conditions to Avoid:	N.E.
Incompatible Materials:	Strong oxidizers and reducing agents.
Decomposition Products:	Oxides of carbon and hydrogen fluoride.
Hazardous Polymerization:	Will not occur.

**SECTION 11 – TOXICOLOGICAL INFORMATION**

Acute Toxicity LD50/LC50:

**Oral;** Rat: >2000 mg/kg, there were no signs of observed toxicity at 2000 mg/kg (the only dose tested). Schering-Plough Research Institute, 1999.

ACGIH	4-(4-fluorobenzoyl)butyric acid	TLV:	N.E.	STEL:	N.E.
	2-(4-fluorobenzoyl)butyric acid	TLV:	N.E.	STEL:	N.E.
OSHA	4-(4-fluorobenzoyl)butyric acid	PEL:	N.E.	STEL:	N.E.
	2-(4-fluorobenzoyl)butyric acid	PEL:	N.E.	STEL:	N.E.

The toxicological effects of 4-(4-fluorobenzoyl)butyric acid and 2-(4-fluorobenzoyl)butyric acid have not been thoroughly investigated.

Carcinogenicity listed by:    NTP: No                    IARC: No                    OSHA: No

**SECTION 12 – ECOLOGICAL INFORMATION**

Toxic to aquatic organisms.

**SECTION 13 – DISPOSAL INFORMATION**

Place in a city, state, or federally permitted disposal facility. Handle in accordance with all applicable regulations.

**SECTION 14 – TRANSPORTATION INFORMATION**

DOT Shipping Name: Not hazardous per DOT guidelines.

**SECTION 15 – REGULATORY INFORMATION****U.S. Regulations:**

TSCA: Not subject to TSCA reporting requirements. Pharmaceutical Intermediate.  
SARA TITLE III

Acute: Yes  
Chronic: No  
Fire: No  
Reactivity: No  
Pressure: No

TSCA 12(b) Export Notification: Not Listed  
California Proposition 65: Not Listed

**European Regulations:**

EINECS Number: 4-(4-fluorobenzoyl)butyric acid: Not registered.  
2-(4-fluorobenzoyl)butyric acid: Not registered.

**Canadian Regulations:**

No components are listed on the DSL.

**Japanese Regulations:**

No components are listed on the ENCS.  
ENCS Number: 4-(4-fluorobenzoyl)butyric acid: Not listed.  
2-(4-fluorobenzoyl)butyric acid: Not listed.

**Australian Regulations:**

No components are listed on the AICS.

**Korean Regulations:**

No components are listed on the ECL.  
ECL Number: 4-(4-fluorobenzoyl)butyric acid: Not listed.  
2-(4-fluorobenzoyl)butyric acid: Not listed.

**SECTION 16 – OTHER INFORMATION****PPE Codes (NPCA-HMIS)**

<b>A</b> – Glasses	<b>G</b> – Glasses, Gloves, Vapor Respirator
<b>B</b> – Glasses, Gloves	<b>H</b> – Goggles, Gloves, Apron, Vapor Respirator
<b>C</b> – Glasses, Gloves, Apron	<b>I</b> – Glasses, Gloves, Dust/Vapor Respirator
<b>D</b> – Faceshield, Gloves, Apron	<b>J</b> – Goggles, Gloves, Apron, Dust/Vapor Respirator
<b>E</b> – Glasses, Gloves, Dustmask	<b>K</b> – Supplied Air, Gloves, Full Protective Suit, Boots
<b>F</b> – Glasses, Gloves, Apron, Dust Respirator	

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