

# Amitraz

sc-239228



The Power is Question

## Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

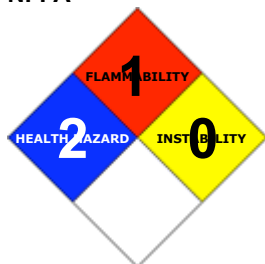
### PRODUCT NAME

Amitraz

### STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

### NFPA



### 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

C19-H23-N3, [(CH3)2C6H3N=CH]2NCH3, "N-methyl-bis(2, 4-xylyliminomethyl)amine", "methanimidamide, ", "N' -(2, 4-dimethylphenyl)-N-[(2, 4-dimethylphenyl)imino)methyl]-N-", methyl-, "N' -(2, 4-dimethylphenyl)-N-[(2, 4-dimethylphenyl)imino)methyl]-", N-methylmethanimidamide, "N, N-di-(2, 4-xylyliminomethyl)methylamine", "1, 5-di(2, 4-dimethylphenyl)-3-methyl-1, 3, 5-triazapenta-1, 4-diene", "formamidine, N-methyl-N' -2, 4-xylyl-N-(N-2, 4-xylylformimidoyl)-", "N-methyl-N' -2, 4-xylyl-N-(N-2, 4-xylylformimidoyl)formamidine", "N, N' -(methyliminodimethyldiyl)bis-2, 4-xylidine", "N' -(2, 4-dimethylphenyl)-N-(2, 4-dimethylphenyl)iminomethyl-N-methyl", methanimidamide, "N' -(2, 4-dimethylphenyl)-N-[(2, 4-dimethylphenyl)imino]-", "2, 4-xylidine, N, N' -(methyliminodimethyldiyl)bis-", "N, N' -bis(2, 4-xylyliminomethyl)methylamine", "N-methylbis(2, 4-xylyliminomethyl)amine", "2-methyl-1, 3-di(2, 4-xylylimino)-2-azapropane", "N, N' -[(methylimino)dimethyldiyl]di-2, 4-xylidine", "N, N-di(2, 4-xylyliminomethyl)methylamine", AMZ, Azaform, Baam, BTS-27419, Edrizar, "Fumilat A", Mitaban, Mitac, Ovasyn, Taktic, TCL, Triazid, U-36059, Varamit, "pesticide/ acaricide/ insecticide"

## Section 2 - HAZARDS IDENTIFICATION

### CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	2	

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



### CANADIAN WHMIS SYMBOLS



## EMERGENCY OVERVIEW

### RISK

Harmful if swallowed.

May cause SENSITISATION by skin contact.

Harmful: danger of serious damage to health by prolonged exposure if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 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

■ The material is not thought to be a skin irritant (as classified using animal models). Abrasive damage however, may result from prolonged exposures.

■ Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

##### 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.

##### CHRONIC HEALTH EFFECTS

■ Harmful: danger of serious damage to health by prolonged exposure if swallowed.

Harmful: danger of serious damage to health by prolonged exposure if swallowed.

This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.

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.

When fed to rats and mice for 90 days amitraz produced decreased body weight gains in female rats and female and male mice at 12 and 50 mg/kg and in male rats at 50 mg/kg. Food and water consumption were decreased in rats at 3 mg/kg and slightly decreased in mice at 12 mg/kg. The effects were more pronounced in males. The relative weights of the brain, heart, lung, liver, kidney, spleen and uterus or testes were increased in both sexes of rats at 50 mg/kg whilst thymus weights were increased and adrenal weights were decreased in males at 50 mg/kg. Haematological changes were first seen in animals exposed at 12 mg/kg. In a two-year study, a reduction in body weight gain and nervous aggressive behaviour were produced at 200 ppm. An increased incidence of lymphoreticular tumours and lung lesions were seen in female mice at 400 ppm in long term studies. When fed to dogs at levels up to 1 mg/kg/day, slight central nervous system depression and hypothermia were seen. Symptoms subsided after the first 2 days.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
amitraz	33089-61-1	>98

## 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 contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

#### **INHALED**

· If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear passage of breathing. · If irritation or discomfort persists seek medical attention.

#### **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.  
Rapid breakdown in animals leads to the excretion of a conjugate of 4-amino-3-methylbenzoic acid and to a lesser extent to N-(2,4-dimethylphenyl)-N'-methylformamidine.

### **Section 5 - FIRE FIGHTING MEASURES**

Vapor Pressure (mmHg):	2.55 mPa (25 C)
Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	1.128 (20 C)
Lower Explosive Limit (%):	Not available

#### **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.  
When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

#### **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 (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), other pyrolysis products typical of burning organic material.

#### **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**

· Remove all ignition sources.  
· Clean up all spills immediately.  
· Avoid contact with skin and eyes.  
· Control personal contact by using protective equipment.  
· Use dry clean up procedures and avoid generating dust.  
· Place in a suitable, labelled container for waste disposal.  
Environmental hazard - contain spillage.

#### **MAJOR SPILLS**

■ Environmental hazard - contain spillage.  
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**

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

**STORAGE REQUIREMENTS**

- Observe manufacturer’s storing and handling recommendations.

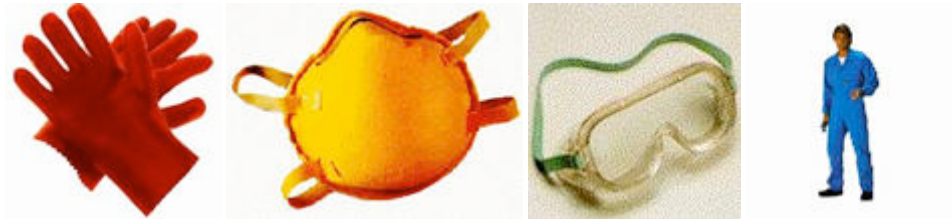
**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE CONTROLS**

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>	TWA F/CC	Notes
US - California Permissible Exposure Limits for Chemical Contaminants	amitraz (Particulates not otherwise regulated Respirable fraction)		5						(n)
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	amitraz (Particulates not otherwise regulated Respirable fraction)		5						
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	amitraz (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction)		5						
US - Michigan Exposure Limits for Air Contaminants	amitraz (Particulates not otherwise regulated, Respirable dust)		5						
Canada - Prince Edward Island Occupational Exposure Limits	amitraz (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)		10						See Appendix B current TLV/BEI Book

ENDOELTABLE

**PERSONAL PROTECTION**



**RESPIRATOR**

Particulate  
Consult your EHS staff for recommendations

**EYE**

- Safety glasses with side shields.
- Chemical goggles.

## HANDS/FEET

- Wear chemical protective gloves, eg. PVC.

NOTE: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

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.

## OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

## ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### PHYSICAL PROPERTIES

Solid.

Does not mix with water.

Sinks in water.

State	Divided solid	Molecular Weight	293.41
Melting Range (°F)	186.8- 188.6	Viscosity	Not Applicable
Boiling Range (°F)	Not available	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapor Pressure (mmHg)	2.55 mPa (25 C)
Upper Explosive Limit (%)	Not available.	Specific Gravity (water=1)	1.128 (20 C)
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

AMITRAZ

log Kow (Sangster 1997):

5.5

### APPEARANCE

White to pale yellow crystalline solid; does not mix well with water 0.1 mg/l, 20 C). Soluble in most organic solvents; in acetone, toluene, xylene >300 g/l. Hydrolysis DT50 (25 C) 2.1 h (pH 5), 22.1 h (pH 7), 25.5 h (pH 9). UV light has little effect on stability. pKa 4.2.

## Section 10 - CHEMICAL STABILITY

### CONDITIONS CONTRIBUTING TO INSTABILITY

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

### STORAGE INCOMPATIBILITY

- Avoid strong acids, bases.
- Avoid reaction with oxidizing agents.

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

## Section 11 - TOXICOLOGICAL INFORMATION

AMITRAZ

## TOXICITY AND IRRITATION

AMITRAZ:

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

TOXICITY	IRRITATION
Oral (woman) LDLo: 0.2 ml	Nil Reported
Oral (rat) LD50: 400 mg/kg	
Oral (rat) LD50: 600-800 mg/kg *	
Inhalation (rat) LC50: 65000 mg/m <sup>3</sup> /6h	
Dermal (rat) LD50: >1600 mg/kg	
Intraperitoneal (rat) LD50: 800 mg/kg	
Oral (mouse) LD50: 1600 mg/kg	
Oral (mice) LD50: 800->1600 mg/kg *	
Oral (dog) LD50: 100 mg/kg	
Oral (rabbit) LD50: >100 mg/kg	
Dermal (rabbit) LD50: >200 mg/kg	
Oral (g.pig) LD50: >400 mg/kg	
Oral (quail) LD50: 788 mg/kg	
Oral (duck) LD50: 7000 mg/kg	

■ [ \* The Pesticides Manual, Incorporating The Agrochemicals Handbook, 10th Edition, Editor Clive Tomlin, 1994, British Crop Protection Council].

ADI: 0.003 mg kg b.w. \*

Toxicity Class WHO III; EPA III \*

NOEL: In a 2-year feeding study no adverse effects were seen in rats receiving 50-200 ppm diet or dogs receiving 0.25 mg/kg daily.

Human NOEL >125 mg/kg daily \*

## CARCINOGEN

AMITRAZ	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	OPP-CAN, P65-PEND
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## Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

This material and its container must be disposed of as hazardous waste.

Avoid release to the environment.

Refer to special instructions/ safety data sheets.

### Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
amitraz	HIGH		HIGH	LOW

## 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



DOT:

Symbols: G Hazard class or Division: 9

Identification Numbers: UN3077 PG: III

Label Codes: 9 Special provisions: 8, 146,

335, B54,

IB8, IP3,

N20, T1,

TP33

Packaging: Exceptions: 155 Packaging: Non- bulk: 213

Packaging: Exceptions: 155 Quantity limitations: No limit

Passenger aircraft/rail:

Quantity Limitations: Cargo No limit Vessel stowage: Location: A  
aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Environmentally hazardous substance, solid, n.o.s

#### **Air Transport IATA:**

ICAO/IATA Class: 9 ICAO/IATA Subrisk: None

UN/ID Number: 3077 Packing Group: III

Special provisions: A97

Cargo Only

Packing Instructions: 911 Maximum Qty/Pack: 400 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: 911 Maximum Qty/Pack: 400 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Y911 Maximum Qty/Pack: 30 kg G

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,

N.O.S. \*(CONTAINS AMITRAZ)

#### **Maritime Transport IMDG:**

IMDG Class: 9 IMDG Subrisk: None

UN Number: 3077 Packing Group: III

EMS Number: F-A , S-F Special provisions: 179 274 335 909

Limited Quantities: 5 kg Marine Pollutant: Yes

Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

## Section 15 - REGULATORY INFORMATION

### **amitraz (CAS: 33089-61-1) is found on the following regulatory lists;**

"US - California Proposition 65 - Priority List for the Development of MADLs for Chemicals Causing Reproductive Toxicity", "US - California Proposition 65 - Reproductive Toxicity", "US - Maine Chemicals of High Concern List", "US EPCRA Section 313 Chemical List", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act", "WHO Guidelines for Drinking-water Quality - Chemicals excluded from guideline value derivation"

## Section 16 - OTHER INFORMATION

*Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.*

■ 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](http://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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