

## Material Safety Data Sheet

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Version 1.3

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

## 1 - Product and Company Information

Product Name	IBUPROFEN
Product Number	I4883
Company	Sigma-Aldrich Pty. Ltd. 12 Anella Avenue Castle Hill NSW 2154 Australia
Technical Phone #	+61 2 9841 0555 (1800 800 097)
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## 2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
4-ISOBUTYL-ALPHA-METHYLPHENYLACETIC ACID	15687-27-1	239-784-6	None

Formula	C13H18O2
Molecular Weight	206.29 AMU
Synonyms	Acide (isobutyl-4 phenyl)-2 propionique (French) * Adran * Advil * Anflagen * Artril 300 * Benzeneacetic acid, alpha-methyl-4-(2-methylpropyl)- * Bluton * Brufanic * Brufen * Buburone * Butylenin * Dolgin * Epobron * Ibufen * Ibuprocin * Ibuprofen * IP-82 * p-Isobutylhydratropic acid * 4-Isobutylhydratropic acid * 2-(4-Isobutylphenyl)propanoic acid * alpha-p-Isobutylphenylpropionic acid * alpha-(4-Isobutylphenyl)propionic acid * 2-(p-Isobutylphenyl)propionic acid * Lamidon * Liptan * Motrin * Mynosedin * Napacetin * Nobfelon * Nobfen * Nobgen * Nuprin * Nurofen * Paduden * Proflex * RD 13621 * Rebugen * Roidenin * Rufin * Unipron

## 3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT  
Harmful if swallowed.

## 4 - First Aid Measures

## AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

#### AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

#### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

#### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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### 5 - Fire Fighting Measures

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#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

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### 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

#### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

#### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: Keep tightly closed.

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### 8 - Exposure Controls / Personal Protection

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#### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

#### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

#### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.  
Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	77 - 78 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	N/A	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

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## 10 - Stability and Reactivity

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### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

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## 11 - Toxicological Information

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RTECS NUMBER: MU6640000

### ACUTE TOXICITY

LDLO

Oral

Man

171 mg/kg

Remarks: Behavioral:General anesthetic. Vascular:BP lowering not characterized in autonomic section.

LDLO

Oral

Child

469 mg/kg  
Remarks: Behavioral:Convulsions or effect on seizure threshold.  
Lungs, Thorax, or Respiration:Dyspnea.

LD50  
Oral  
Rat  
636 mg/kg

LD50  
Intraperitoneal  
Rat  
626 MG/KG  
Remarks: Behavioral:Analgesia. Biochemical:Metabolism  
(intermediary): Effect on inflammation or mediation of  
inflammation. Nutritional and Gross Metabolic:Changes in:Body  
temperature decrease.

LD50  
Subcutaneous  
Rat  
740 MG/KG

LD50  
Rectal  
Rat  
530 MG/KG  
Remarks: Behavioral:Altered sleep time (including change in  
righting reflex). Behavioral:Change in motor activity (specific  
assay). Gastrointestinal:Hypermotility, diarrhea.

LD50  
Oral  
Mouse  
740 mg/kg  
Remarks: Behavioral:Analgesia.

LD50  
Intraperitoneal  
Mouse  
320 MG/KG  
Remarks: Behavioral:Altered sleep time (including change in  
righting reflex). Gastrointestinal:Ulceration or bleeding from  
stomach.

LD50  
Subcutaneous  
Mouse  
395 MG/KG

LD50  
Rectal  
Mouse  
620 MG/KG  
Remarks: Behavioral:Altered sleep time (including change in  
righting reflex). Behavioral:Change in motor activity (specific  
assay). Gastrointestinal:Hypermotility, diarrhea.

LD50  
Oral  
Rabbit  
1400 mg/kg

LD50  
Rectal  
Rabbit  
830 MG/KG

LD50  
Oral  
Guinea pig  
495 mg/kg

LD50  
Oral  
Hamster  
1690 mg/kg

LD50  
Oral  
Mammal  
1000 mg/kg

#### SENSITIZATION

Sensitization: Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

#### SIGNS AND SYMPTOMS OF EXPOSURE

Clinical trials have shown the following possible adverse reactions: gastrointestinal disturbances including nausea, vomiting, cramps, diarrhea, constipation, bloating, central nervous system effects which include dizziness, headache, depression, insomnia, aseptic meningitis, somnolence, dermatological effects of maculopapular and vesiculobullous eruptions, urticaria, alopecia, erythema multiforme, stevens-johnson syndrome, hematologic effects of neutropenia, aplastic and hemolytic anemia, thrombocytopenia, decreases in hemoglobin and hematocrit. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

#### ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.  
Skin Absorption: May be harmful if absorbed through the skin.  
Eye Contact: May cause eye irritation.  
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.  
Ingestion: Harmful if swallowed.

#### TARGET ORGAN INFORMATION

Kidneys.

#### CHRONIC EXPOSURE - MUTAGEN

Mouse  
1470 MG/KG  
Oral  
7D  
Cytogenetic analysis

Mouse  
50 MG/KG  
Intraperitoneal  
Sister chromatid exchange

Mouse  
270 MG/KG  
Oral  
Sister chromatid exchange

#### CHRONIC EXPOSURE - TERATOGEN

Result: Laboratory experiments have shown teratogenic effects.

Species: Rat  
Dose: 840 MG/KG  
Route of Application: Oral  
Exposure Time: (8-14D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Rat  
Dose: 10 MG/KG  
Route of Application: Oral  
Exposure Time: (21D PREG)  
Result: Effects on Embryo or Fetus: Other effects to embryo.

Species: Rat  
Dose: 810 MG/KG  
Route of Application: Rectal  
Exposure Time: (60D MALE/2W PRE-7D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse  
Dose: 1260 MG/KG  
Route of Application: Oral  
Exposure Time: (7-13D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Embryo or Fetus: Fetal death.

#### CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Woman  
Dose: 8 MG/KG  
Route of Application: Oral  
Exposure Time: (1D PRE)  
Result: Maternal Effects: Menstrual cycle changes or disorders.

Species: Rat  
Dose: 600 MG/KG  
Route of Application: Oral  
Exposure Time: (3-5D PREG)  
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Rat  
Dose: 9750 MG/KG  
Route of Application: Oral  
Exposure Time: (65D MALE)  
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count). Paternal Effects: Testes, epididymis, sperm duct.

Species: Rat  
Dose: 2 MG/KG  
Route of Application: Intrauterine  
Exposure Time: (4D PREG)  
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Rat  
Dose: 270 MG/KG  
Route of Application: Rectal  
Exposure Time: (17-21D PREG)  
Result: Maternal Effects: Parturition. Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Species: Rat  
Dose: 891 MG/KG  
Route of Application: Rectal  
Exposure Time: (17-21D PREG/21D POST)  
Result: Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4).

Species: Rat  
Dose: 1 GM/KG  
Route of Application: Rectal  
Exposure Time: (17-21D PREG/4D POST)  
Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

Species: Rat  
Dose: 8100 MG/KG  
Route of Application: Rectal  
Exposure Time: (60D MALE/2W PRE-7D PREG)  
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

Species: Mouse  
Dose: 420 MG/KG  
Route of Application: Oral  
Exposure Time: (7-13D PREG)  
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).

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## 12 - Ecological Information

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No data available.

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

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## 14 - Transport Information

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RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

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## 15 - Regulatory Information

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### CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: Xn

Harmful.

R-PHRASES: 22

Harmful if swallowed.

S-PHRASES: 36

Wear suitable protective clothing.

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## 16 - Other Information

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### WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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