Section 1 - Product and Company Information

Product Name                  NIFEDIPINE
Product Number               N7634
Brand                        SIGMA
Company                      Sigma-Aldrich Canada, Ltd
Address                      2149 Winston Park Drive
                              Oakville ON L6H 6J8 CA
Technical Phone:             9058299500
Fax:                         9058299292
Emergency Phone:             800-424-9300

Section 2 - Composition/Information on Ingredient

Substance Name      CAS #       SARA 313
NIFEDIPINE           21829-25-4   No

Formula         C17H18N2O6
Synonyms        Adalat * Adalate * BAY 1040 * BAY A 1040 *
                    Citilat * Corinfar *
                    1,4-Dihydro-2,6-dimethyl-4-(2'-nitrophenyl)-3,5-pyr
                   idinedicarboxylic acid dimethyl ester * Dimethyl
                    1,4-dihydro-2,6-dimethyl-4-(2'-nitrophenyl)-3,5-py
                   ridinedicarboxylate * Fenihidin * Fenihidine *
                   Nifedipine *
                    4-(2'-Nitrophenyl)-2,6-dimethyl-3,5-dicarboxymethoxy
                   -1,4-dihydropyridine *
                    4-(2'-Nitrophenyl)-2,6-dimethyl-1,4-dihydropyridin
                   -3,5-dicarbonsaeuredimethylester (German) *
                   Oxcord * Procardia

RTECS Number:   US7975000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Harmful.
Harmful if swallowed.
Target organ(s): Cardiovascular system. Blood. Calif. Prop. 65
developmental hazard.

HMIS RATING
HEALTH: 1*
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING
HEALTH: 1
FLAMMABILITY: 0
REACTIVITY: 1

*additional chronic hazards present.
Section 4 - First Aid Measures

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

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

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

EYE EXPOSURE
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.

Section 5 - Fire Fighting Measures

FLASH POINT
N/A

AUTOIGNITION TEMP
N/A

FLAMMABILITY
N/A

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

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE 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.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
STORAGE
Suitable: Keep tightly closed.
Store at 2-8°C

SPECIAL REQUIREMENTS
Light sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
<th>At Temperature or Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Physical State: Solid</td>
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<tr>
<td></td>
<td>Color: Yellow</td>
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<tr>
<td>Molecular Weight</td>
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<td>pH</td>
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<td>Freezing Point</td>
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<td>Vapor Pressure</td>
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<td>Saturated Vapor Conc.</td>
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<td>Solubility</td>
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N/A = not available
Section 10 - Stability and Reactivity

STABILITY
- Stable: Stable.
- Conditions of Instability: Light sensitive.
- Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
- Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION
- Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

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: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
- Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

SIGNS AND SYMPTOMS OF EXPOSURE
- To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
- Symptoms of overexposure include dizziness or light-headedness, peripheral edema, nausea, weakness, headache, and flushing.

TOXICITY DATA

Oral
- Rat
- 1022 mg/kg LD50

Intraperitoneal
- Rat
- 230 MG/KG LD50

Subcutaneous
- Rat
- >10 GM/KG LD50

Intravenous
- Rat
- 6 MG/KG LD50

Oral
Mouse
202 mg/kg
LD50

Intraperitoneal
Mouse
185 MG/KG
LD50
Remarks: Vascular: BP lowering not characterized in autonomic section. Vascular: Regional or general arteriolar or venous dilation.

Subcutaneous
Mouse
>10 GM/KG
LD50

Intravenous
Mouse
4200 UG/KG
LD50

Oral
Cat
100 mg/kg
LD50

Oral
Rabbit
504 mg/kg
LD50

Intravenous
Rabbit
2 MG/KG
LD50

CHRONIC EXPOSURE - TERATOGEN
Result: Laboratory experiments have shown teratogenic effects.

Species: Rat
Dose: 550 MG/KG
Route of Application: Oral
Exposure Time: (7-17D PREG)
Result: Effects on Newborn: Stillbirth. Specific Developmental Abnormalities: Musculoskeletal system.
Species: Rat  
Dose: 10 MG/KG  
Route of Application: Oral  
Exposure Time: (21D PREG)  
Result: Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

Species: Rat  
Dose: 40 MG/KG  
Route of Application: Oral  
Exposure Time: (14D PREG)  
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Rabbit  
Dose: 33200 UG/KG  
Route of Application: Oral  
Exposure Time: (16D PREG)  
Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Domestic Animals  
Dose: 94 UG/KG/30M-C  
Route of Application: Intravenous  
Exposure Time: (18W PREG)  
Result: Maternal Effects: Other effects. Specific Developmental Abnormalities: Cardiovascular (circulatory) system.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Woman  
Dose: 200 UG/KG  
Route of Application: Oral  
Exposure Time: (27W PREG)  
Result: Maternal Effects: Other effects. Effects on Embryo or Fetus: Other effects to embryo.

Species: Woman  
Dose: 200 UG/KG  
Route of Application: Oral  
Exposure Time: (33W PREG)  
Result: Maternal Effects: Other effects. Effects on Embryo or Fetus: Other effects to embryo.

Species: Rat  
Dose: 275 MG/KG  
Route of Application: Oral  
Exposure Time: (7-17D PREG)  
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetal death.

Species: Rat  
Dose: 15 MG/KG  
Route of Application: Intraperitoneal  
Exposure Time: (11D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
Species: Mouse  
Dose: 5 GM/KG  
Route of Application: Oral  
Exposure Time: (6-15D PREG)  
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).  
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rabbit  
Dose: 780 MG/KG  
Route of Application: Oral  
Exposure Time: (6-18D 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: Other measures of fertility  
Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Species: Rabbit  
Dose: 6 MG/KG  
Route of Application: Intravenous  
Exposure Time: (1D PRE)  
Result: Maternal Effects: Ovaries, fallopian tubes.

Species: Rabbit  
Dose: 6 MG/KG  
Route of Application: Intramuscular  
Exposure Time: (1D PRE)  
Result: Maternal Effects: Ovaries, fallopian tubes.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION  
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.

Section 14 - Transport Information

DOT  
Proper Shipping Name: None  
Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA  
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION  
Symbol of Danger: Xn  
Indication of Danger: Harmful.  
R: 22
Risk Statements: Harmful if swallowed.
S: 26-36
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Harmful.
Risk Statements: Harmful if swallowed.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: No

UNITED STATES - STATE REGULATORY INFORMATION

CALIFORNIA PROP - 65
California Prop - 65: This product is or contains chemical(s) known to the state of California to cause developmental toxicity.

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

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.
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