

MATERIAL SAFETY DATA SHEET

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Version 1.9

Section 1 - Product and Company Information

Product Name COLCHICINE CRYSTALLINE
Product Number C9754
Brand SIGMA

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
COLCHICINE	64-86-8	Yes

Formula C₂₂H₂₅NO₆
Synonyms Acetamide,
N-(5,6,7,9-tetrahydro-1,2,3,10-tetramethoxy-9-oxob
enzo(alpha)heptalen-7-yl)- * N-Acetyl
trimethylcolchicinic acid methylether *
Benzo(a)heptalen-9(5H)-one,
7-acetamido-6,7-dihydro-1,2,3,10-tetramethoxy- *
Colchicin (German) * Colchicina (Italian) *
7-alpha-H-Colchicine * Colchineos * Colchisol *
Colcin * Colsaloid * Condylon * NSC 757

RTECS Number: GH0700000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Highly Toxic (USA) Very Toxic (EU).
Very toxic by inhalation, in contact with skin and if swallowed.
Risk of serious damage to eyes.
Calif. Prop. 65 developmental hazard. Target organ(s): Liver.
Kidneys.

HMIS RATING

HEALTH: 3*
FLAMMABILITY: 0
REACTIVITY: 1

NFPA RATING

HEALTH: 3
FLAMMABILITY: 0
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

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

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

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide.

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. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Store in a cool dry place. Store in the dark.

SPECIAL REQUIREMENTS

Light sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use only in a chemical fume hood.

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 full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid Color: Faintly beige Form: Powder	
Property	Value	At Temperature or Pressure
Molecular Weight	399.44 AMU	
pH	5.9	Concentration: 5 g/l
BP/BP Range	N/A	
MP/MP Range	150 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	< 3 %	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: Soluble. Other Solvents: METHANOL, CHLOROFORM	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Light.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and 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: Causes severe eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be fatal if inhaled.

Ingestion: May be fatal if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Liver. Kidneys. Bone marrow. Nerves. Cardiovascular system.

SIGNS AND SYMPTOMS OF EXPOSURE

Stomach pains, vomiting, diarrhea. Exposure can cause: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Woman

3 mg/kg

LDLO

Remarks: Behavioral:Convulsions or effect on seizure threshold.

Cardiac:Other changes. Lungs, Thorax, or Respiration:Dyspnea.

Oral

Woman

0.6 mg/kg

LDLO

Remarks: Cardiac:Other changes. Blood:Aplastic anemia.

Nutritional and Gross Metabolic:Changes in:Metabolic acidosis.

Oral

Woman

8.36 mg/kg

LDLO

Remarks: Cardiac:Other changes. Lungs, Thorax, or

Respiration:Other changes. Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis).

Oral

Human

0.086 mg/kg

LDLO

Remarks: Lungs, Thorax, or Respiration:Dyspnea.

Gastrointestinal:Other changes. Nutritional and Gross Metabolic:Changes in:Body temperature decrease.

Oral
Man
11 mg/kg
LDLO

Remarks: Lungs, Thorax, or Respiration:Respiratory stimulation.
Kidney, Ureter, Bladder:Changes in tubules (including acute renal failure, acute tubular necrosis). Nutritional and Gross Metabolic:Changes in:Body temperature increase.

Intravenous
Woman
360 UG/KG
LDLO

Remarks: Kidney, Ureter, Bladder:Other changes. Blood: Hemorrhage.

Intravenous
Man
143 UG/KG
LDLO

Remarks: Blood:Aplastic anemia. Other changes

Intravenous
Human
129 UG/KG
LDLO

Remarks: Vascular:BP lowering not characterized in autonomic section. Vascular:Shock. Gastrointestinal:Hypermotility, diarrhea.

Intravenous
Rat
1600 UG/KG
LD50

Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Food intake (animal). Gastrointestinal:Hypermotility, diarrhea.

Oral
Mouse
5.886 mg/kg
LD50

Intraperitoneal
Mouse
1600 UG/KG
LD50

Subcutaneous
Mouse
1200 UG/KG
LD50

Intravenous
Mouse
1700 UG/KG
LD50

Intramuscular
Mouse
1197 UG/KG
LD50

Remarks: Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

Intravenous
Cat
250 UG/KG
LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold.
Gastrointestinal:Nausea or vomiting. Nutritional and Gross
Metabolic:Changes in:Body temperature decrease.

Intraperitoneal
Guinea pig
500 UG/KG
LD50

Intraperitoneal
Hamster
7300 UG/KG
LD50

Oral
Quail
42 mg/kg
LD50

Intraperitoneal
Gerbil
90 MG/KG
LD50

Oral
Bird (wild)
31.6 mg/kg
LD50

IRRITATION DATA

Eyes
Rabbit
1 %
3D
Remarks: Severe irritation effect

CHRONIC EXPOSURE - TERATOGEN

Result: Laboratory experiments have shown teratogenic effects.

Species: Rat
Dose: 1200 UG/KG
Route of Application: Subcutaneous
Exposure Time: (18-20D PREG)
Result: Effects on Newborn: Behavioral. Effects on Newborn:
Growth statistics (e.g., reduced weight gain). Specific
Developmental Abnormalities: Central nervous system.

Species: Rat
Dose: 1200 UG/KG
Route of Application: Subcutaneous
Exposure Time: (18-20D PREG)
Result: Effects on Embryo or Fetus: Cytological changes
(including somatic cell genetic material).

Species: Mouse
Dose: 500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (7D PREG)
Result: Specific Developmental Abnormalities: Body wall.
Specific Developmental Abnormalities: Eye, ear. Specific
Developmental Abnormalities: Central nervous system.

Species: Mouse
Dose: 500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (7D PREG)
Result: Specific Developmental Abnormalities: Urogenital system.

Species: Mouse
Dose: 1 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Cytological changes
(including somatic cell genetic material).

Species: Mouse
Dose: 500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (8D PREG)
Result: Effects on Embryo or Fetus: Fetal death. Specific
Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 2 MG/KG
Route of Application: Subcutaneous
Exposure Time: (7-10D PREG)
Result: Specific Developmental Abnormalities: Central nervous
system. Specific Developmental Abnormalities: Body wall.
Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 1250 UG/KG
Route of Application: Subcutaneous
Exposure Time: (9D PREG)
Result: Specific Developmental Abnormalities: Central nervous
system. Specific Developmental Abnormalities: Eye, ear. Specific
Developmental Abnormalities: Craniofacial (including nose and
tongue).

Species: Mouse
Dose: 3750 UG/KG
Route of Application: Subcutaneous
Exposure Time: (4-6D PREG)
Result: Specific Developmental Abnormalities: Eye, ear. Effects
on Embryo or Fetus: Fetal death.

Species: Mouse
Dose: 1 MG/KG
Route of Application: Subcutaneous
Exposure Time: (9D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

Species: Hamster
Dose: 10 MG/KG
Route of Application: Intravenous
Exposure Time: (8D PREG)

Result: Specific Developmental Abnormalities: Body wall.
Specific Developmental Abnormalities: Eye, ear. Specific
Developmental Abnormalities: Central nervous system.

Species: Hamster

Dose: 10 MG/KG

Route of Application: Intravenous

Exposure Time: (8D PREG)

Result: Effects on Embryo or Fetus: Fetal death. Specific
Developmental Abnormalities: Musculoskeletal system.

CHRONIC EXPOSURE - MUTAGEN

Species: Human

Dose: 50 NMOL/L

Cell Type: lymphocyte

Mutation test: Micronucleus test

Species: Human

Route: Skin

Dose: 20 UG/L

Mutation test: Micronucleus test

Species: Human

Dose: 1 MG/L

Cell Type: fibroblast

Mutation test: DNA damage

Species: Human

Dose: 100 UMOL/L

Cell Type: Other cell types

Mutation test: DNA inhibition

Species: Human

Dose: 1 MG/L

Cell Type: lymphocyte

Mutation test: DNA inhibition

Species: Human

Dose: 230 NMOL/L

Cell Type: HeLa cell

Mutation test: DNA inhibition

Species: Human

Dose: 10 UG/L

Cell Type: lymphocyte

Mutation test: Other mutation test systems

Species: Human

Dose: 50 NMOL/L

Cell Type: HeLa cell

Mutation test: Cytogenetic analysis

Species: Hamster

Dose: 100 NMOL/L

Cell Type: leukocyte

Mutation test: SLN

Species: Human

Dose: 10 UG/L

Cell Type: fibroblast

Mutation test: Mutation in mammalian somatic cells.

Species: Rat
Route: Intraperitoneal
Dose: 200 UG/KG
Mutation test: Micronucleus test

Species: Mouse
Route: Intraperitoneal
Dose: 1250 UG/KG
Exposure Time: 24H
Mutation test: Micronucleus test

Species: Mouse
Route: Inhalation
Dose: 200 MG/M3
Mutation test: Micronucleus test

Species: Mouse
Route: Oral
Dose: 8 MG/KG
Mutation test: Micronucleus test

Species: Mouse
Dose: 12500 NG/L
Cell Type: Other cell types
Mutation test: Micronucleus test

Species: Mouse
Dose: 500 UG/L
Cell Type: Other cell types
Mutation test: DNA inhibition

Species: Mouse
Route: Intraperitoneal
Dose: 350 UG/KG
Mutation test: Other mutation test systems

Species: Mouse
Dose: 500 NMOL/L
Cell Type: lymphocyte
Mutation test: Other mutation test systems

Species: Mouse
Route: Parenteral
Dose: 3500 UG/KG
Mutation test: Other mutation test systems

Species: Mouse
Dose: 10 UMOL/L
Cell Type: Ascites tumor
Mutation test: Other mutation test systems

Species: Mouse
Dose: 3330 UG/KG
Cell Type: Ascites tumor
Mutation test: Other mutation test systems

Species: Mouse
Route: Intraperitoneal
Dose: 40 MG/KG
Mutation test: Other mutation test systems

Species: Mouse
Dose: 4 UMOL/L
Cell Type: Ascites tumor
Mutation test: Cytogenetic analysis

Species: Mouse
Route: Intraperitoneal
Dose: 200 UG/KG
Mutation test: SLN

Species: Mouse
Dose: 666 PPM
Cell Type: Embryo
Mutation test: Mutation in mammalian somatic cells.

Species: Mouse
Route: Intraperitoneal
Dose: 3 MG/KG
Exposure Time: 5D
Mutation test: sperm

Species: Mouse
Route: Parenteral
Dose: 3500 UG/KG
Mutation test: sperm

Species: Hamster
Dose: 100 UMOL/L
Cell Type: Embryo
Mutation test: Micronucleus test

Species: Hamster
Route: Intraperitoneal
Dose: 2500 UG/KG
Mutation test: Micronucleus test

Species: Hamster
Dose: 10 UG/L
Cell Type: lung
Mutation test: Micronucleus test

Species: Hamster
Dose: 1600 MG/L
Cell Type: ovary
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 1 MG/L
Exposure Time: 10M
Cell Type: fibroblast
Mutation test: Cytogenetic analysis

Species: Hamster
Route: Intraperitoneal
Dose: 3 UG/KG
Mutation test: SLN

Species: Hamster
Dose: 6250 UG/L
Cell Type: Embryo
Mutation test: SLN

Species: Hamster
Dose: 62500 UG/L
Cell Type: ovary
Mutation test: SLN

Species: Cattle, Horse
Route: Skin
Dose: 20 UG/L
Mutation test: Micronucleus test

Species: Cattle, Horse
Dose: 20 UG/L
Cell Type: Other cell types
Mutation test: Micronucleus test

Species: Rabbit
Dose: 30 UMOL/L
Cell Type: kidney
Mutation test: DNA inhibition

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 250 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rat
Dose: 5 MG/KG
Route of Application: Subcutaneous
Exposure Time: (8D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Species: Mouse
Dose: 80 MG/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)
Result: Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive). Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Species: Mouse
Dose: 2500 UG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D MALE)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea).

Species: Mouse
Dose: 320 MG/KG
Route of Application: Intratesticular
Exposure Time: (2D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Rabbit
Dose: 22500 UG/KG
Route of Application: Subcutaneous

Exposure Time: (30D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.

Species: Rabbit
Dose: 4 MG/KG
Route of Application: Intravenous
Exposure Time: (1D PRE)
Result: Effects on Fertility: Other measures of fertility

Species: Domestic Animals
Dose: 1 MG/KG
Route of Application: Intravenous
Exposure Time: (1D PRE)
Result: Maternal Effects: Other effects.

Species: Cattle, Horse
Dose: 2 UG/KG
Route of Application: Intrauterine
Exposure Time: (42D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Maternal Effects: Other effects.

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: Alkaloids, solid, n.o.s. [or]
Alkaloid salts, solid, n.o.s. [poisonous]
UN#: 1544
Class: 6.1
Packing Group: Packing Group I
Hazard Label: Toxic substances.
PIH: Not PIH

IATA

Proper Shipping Name: Alkaloids, solid, n.o.s.
IATA UN Number: 1544
Hazard Class: 6.1
Packing Group: I

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: T+
Indication of Danger: Very toxic.
R: 26/28
Risk Statements: Very toxic by inhalation and if swallowed.
S: 13-45
Safety Statements: Keep away from food, drink, and animal

feedingstuffs. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Highly Toxic (USA) Very Toxic (EU).
Risk Statements: Very toxic by inhalation, in contact with skin and if swallowed. Risk of serious damage to eyes.
Safety Statements: Do not breathe dust. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Calif. Prop. 65 developmental hazard. Target organ(s): Liver. Kidneys.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: Yes
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes

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 male 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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