SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-T-50683
Product Name	1-Chloro-2,4-dinitrobenzene
CAS No.	97-00-7
Category	Intermediate
Synonyms	2,4-Dinitro-1-chlorobenzene 6-Chloro-1,3-dinitrobenzene 1-Chloro-2,4-dinitrobenzol 1-Cloro-2,4-dinitrobenzene
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email **sales@clearsynth.com** for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Skin irritation (Category 2)
Acute toxicity (Category 4)

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement
H301	Not available

H311	Not available
H331	Not available
H373	Not available
H400	Not available
H410	Not available
H301+H331	Not available
H302	Harmful if swallowed.
H310	Not available
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	Not available
H341	Not available
H370	Not available
H372	Not available

Precautionary Statement(s)

Code	Statement
P260	Not available
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P262	Not available
P264	Wash hands thoroughly after handling.
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P273	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P316	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316	Not available

P319	Get medical help if you feel unwell.
P321	Specific treatment (see … on this label).
P330	Not available
P361+P364	Not available
P391	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio
P264+P265	Not available
P272	Not available
P301+P317	Not available
P305+P354+P338	Not available
P317	Not available
P332+P317	If skin irritation occurs: Get medical help.
P333+P317	Not available
P362+P364	Take off contaminated clothing and wash it before reuse.
P203	Not available
P308+P316	Not available
P318	Not available

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : 1-Chloro-2,4-dinitrobenzene
CAS Number : 97-00-7
Molecular Formula : C■H■ClN■O■
Molecular Weight : 202.55
Parent Chemical : Benzene
Synonyms : 2,4-Dinitro-1-chlorobenzene
6-Chloro-1,3-dinitrobenzene
1-Chloro-2,4-dinitrobenzol
1-Cloro-2,4-dinitrobenzene
Concentration : Not available

SECTION 4: First aid measures

Not available

SECTION 5: Firefighting measures

Not available

SECTION 6: Accidental release measures

Not available

SECTION-7: Handling and storage

Not available

SECTION 8: Exposure controls / personal protection

Not available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	Pale yellow solid
IR spectrum	Confirms
pH	No data available
Solubility	In DMSO

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available

Property	Value
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

Not available

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: For more Human Toxicity Excerpts (Complete) data for 1-CHLORO-2,4-DINITROBENZENE (7 total), please visit the HSDB record page. /LABORATORY ANIMALS: Acute Exposure/ The cmpd is irritating to the skin of rabbits & highly irritating to their eyes.
- Skin corrosion/irritation: /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ ... Respiratory allergy was tested in Th2-prone Brown Norway (BN) rats by dermal sensitization with the contact allergen dinitrochlorobenzene (DNCB; 1%, day 0; 0.5%, day 7) and a head/nose-only inhalation challenge of 27mg/cu m of DNCB (15 min, day 21), using a protocol that successfully identified chemical respiratory allergens. Skin allergy to DNCB was examined in BN rats and Th1-prone Wistar rats in a local lymph node assay followed by a topical patch challenge of 0.1% DNCB. Sensitization of BN rats via the skin induced DNCB-specific IgG in serum, but not in all animals, and an increased number of CD4+ cells in the lung parenchyma. Subsequent inhalation challenge with DNCB did not provoke apneas or allergic inflammation (signs of respiratory allergy) in the BN rats. However, microarray analysis of mRNA isolated from the lung revealed upregulation of the genes for Ccl2 (MCP-1), Ccl4 (MIP-1beta), Ccl7 and Ccl17. Skin challenge induced considerably less skin irritation and allergic dermatitis in the BN rat than in the Wistar rat. In conclusion, the Th2-prone BN rat appeared less sensitive to DNCB than the Wistar rat; nevertheless, DNCB induced allergic inflammation in the skin of BN rats but even a relatively high challenge concentration did not induce allergy in the respiratory tract, although genes associated with allergy were upregulated in lung tissue.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: /HUMAN EXPOSURE STUDIES/ Contact sensitization by ingredients in personal products is an important clinical problem. It is not clear how sensitization is induced by the generally low concentrations at which they occur but it might be the result of repeated exposure. To compare the strength of contact sensitization induced by a single exposure to 2,4-dinitrochlorobenzene (60 ug cm(-2)) or three repeated

exposures to a subsensitizing dose (10 ug cm(-2)). Two groups (n = 10) of healthy adult volunteers were randomized to receive either a single patch of 2,4-dinitrochlorobenzene 60 ug cm(-2) or three once-weekly applications to the same site of 10 ug cm(-2) 2,4-dinitrochlorobenzene. Four weeks after the last application, sensitization was quantified by measurement of responses (skinfold thickness) to a graded series of four challenge doses. All the volunteers were sensitized and the strength of the responses was virtually identical between the groups. The same degree of sensitization was induced by three exposures to 2,4-dinitrochlorobenzene 10 ug cm(-2) as by one exposure to 60 ug cm(-2) of 2,4-dinitrochlorobenzene. Thus repeated exposure to low doses of contact sensitizers may increase the sensitizing potency. /LABORATORY ANIMALS: Subchronic or Prechronic Exposure/ ... Respiratory allergy was tested in Th2-prone Brown Norway (BN) rats by dermal sensitization with the contact allergen dinitrochlorobenzene (DNCB; 1%, day 0; 0.5%, day 7) and a head/nose-only inhalation challenge of 27mg/cu m of DNCB (15 min, day 21), using a protocol that successfully identified chemical respiratory allergens. Skin allergy to DNCB was examined in BN rats and Th1-prone Wistar rats in a local lymph node assay followed by a topical patch challenge of 0.1% DNCB. Sensitization of BN rats via the skin induced DNCB-specific IgG in serum, but not in all animals, and an increased number of CD4+ cells in the lung parenchyma. Subsequent inhalation challenge with DNCB did not provoke apneas or allergic inflammation (signs of respiratory allergy) in the BN rats. However, microarray analysis of mRNA isolated from the lung revealed upregulation of the genes for Ccl2 (MCP-1), Ccl4 (MIP-1beta), Ccl7 and Ccl17. Skin challenge induced considerably less skin irritation and allergic dermatitis in the BN rat than in the Wistar rat. In conclusion, the Th2-prone BN rat appeared less sensitive to DNCB than the Wistar rat; nevertheless, DNCB induced allergic inflammation in the skin of BN rats but even a relatively high challenge concentration did not induce allergy in the respiratory tract, although genes associated with allergy were upregulated in lung tissue.

- Germ cell mutagenicity: /GENOTOXICITY/ In the Salmonella/microsome test, 1-chlor-2,4-dinitrobenzene was mutagenic for TA100, TA1538, and TA98 /strains/... .
- Carcinogenicity: No data available.
- Reproductive toxicity: No data available.
- STOT-single exposure: /HUMAN EXPOSURE STUDIES/ Contact sensitization by ingredients in personal products is an important clinical problem. It is not clear how sensitization is induced by the generally low concentrations at which they occur but it might be the result of repeated exposure. To compare the strength of contact sensitization induced by a single exposure to 2,4-dinitrochlorobenzene (60 ug cm(-2)) or three repeated exposures to a subsensitizing dose (10 ug cm(-2)). Two groups (n = 10) of healthy adult volunteers were randomized to receive either a single patch of 2,4-dinitrochlorobenzene 60 ug cm(-2) or three once-weekly applications to the same site of 10 ug cm(-2) 2,4-dinitrochlorobenzene. Four weeks after the last application, sensitization was quantified by measurement of responses (skinfold thickness) to a graded series of four challenge doses. All the volunteers were sensitized and the strength of the responses was virtually identical between the groups. The same degree of sensitization was induced by three exposures to 2,4-dinitrochlorobenzene 10 ug cm(-2) as by one exposure to 60 ug cm(-2) of 2,4-dinitrochlorobenzene. Thus repeated exposure to low doses of contact sensitizers may increase the sensitizing potency.
- STOT-repeated exposure: /HUMAN EXPOSURE STUDIES/ Contact sensitization by ingredients in personal products is an important clinical problem. It is not clear how sensitization is induced by the generally low concentrations at which they occur but it might be the result of repeated exposure. To compare the strength of contact sensitization induced by a single exposure to 2,4-dinitrochlorobenzene (60 ug cm(-2)) or three repeated exposures to a subsensitizing dose (10 ug cm(-2)). Two groups (n = 10) of healthy adult volunteers were randomized to receive either a single patch of 2,4-dinitrochlorobenzene 60 ug cm(-2) or three once-weekly applications to the same site of 10 ug cm(-2) 2,4-dinitrochlorobenzene. Four weeks after the last application, sensitization was quantified by measurement of responses (skinfold thickness) to a graded series of four challenge doses. All the volunteers were sensitized and the strength of the responses was virtually identical between the

groups. The same degree of sensitization was induced by three exposures to 2,4-dinitrochlorobenzene 10 ug cm(-2) as by one exposure to 60 ug cm(-2) of 2,4-dinitrochlorobenzene. Thus repeated exposure to low doses of contact sensitizers may increase the sensitizing potency. /SIGNS AND SYMPTOMS/ ... Chronic poisoning ... cause gradual onset of symptoms of retrobulbar neuritis, with blurring of vision, central scotoma, esp for green, and constriction of visual fields ... optic neuritis may gradually become evident, in exceptional instances leading to optic atrophy ... pupillary reaction in accommodation /is impaired/ ... .
- Aspiration hazard: No data available.

Likely routes of exposure
- MAY BE ABSORBED! Redness. Pain. Further see Inhalation.

Symptoms related to the physical, chemical and toxicological characteristics
- /SIGNS AND SYMPTOMS/ ... Chronic poisoning ... cause gradual onset of symptoms of retrobulbar neuritis, with blurring of vision, central scotoma, esp for green, and constriction of visual fields ... optic neuritis may gradually become evident, in exceptional instances leading to optic atrophy ... pupillary reaction in accommodation /is impaired/ ... .

SECTION 12: Ecological information

Not available

SECTION 13: Disposal considerations

Not available

SECTION 14: Transport information

Not available

SECTION 15: Regulatory information

Not available

SECTION 16: Other information

Not available

DISCLAIMER

This MSDS is system-generated. Please verify and confirm all data, statements, and values with the Support Team before use or distribution.