

# SAFETY DATA SHEET

Creation Date 03-May-2012

Revision Date 19-Dec-2025

Revision Number 6

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

## 1. Identification

**Product Name** 1,3-Dichloro-5,5-dimethylhydantoin

**Cat No. :** AC214220000; AC214220010; AC214220050; AC214222500

**CAS No** 118-52-5

**Synonyms** 2,4-Imidazolidineione; Dichlorantin.

**Recommended Use** Laboratory chemicals.

**Uses advised against** Food, drug, pesticide or biocidal product use.

### Details of the supplier of the safety data sheet

#### Company

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

#### **Emergency Telephone Number**

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Oxidizing solids	Category 2
Acute oral toxicity	Category 4
Skin Corrosion/Irritation	Category 1 B
Serious Eye Damage/Eye Irritation	Category 1
Skin Sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

### Label Elements

**Signal Word**  
Danger

**Hazard Statements**

May intensify fire; oxidizer

Harmful if swallowed

Causes severe skin burns and eye damage

May cause respiratory irritation

May cause an allergic skin reaction

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Do not breathe dust/fume/gas/mist/vapors/spray

Wear protective gloves/protective clothing/eye protection/face protection

Contaminated work clothing should not be allowed out of the workplace

Use only outdoors or in a well-ventilated area

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Keep away from clothing and other combustible materials

Take any precaution to avoid mixing with combustibles

**Response**

Immediately call a POISON CENTER or doctor

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

Take off contaminated clothing and wash before reuse

If skin irritation or rash occurs: Get medical advice/attention

**Eyes**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Ingestion**

Rinse mouth

Do NOT induce vomiting

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

**Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life

**Hazards classified under paragraph (d)(1)(ii) of 1910.1200****Hazards resulting from a reaction with other chemicals under normal conditions of use**

Contact with acids liberates toxic gas.

### 3. Composition/information on Ingredients

Component	CAS No	Weight %
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	<=100

#### 4. First-aid measures

<b>General Advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Keep eye wide open while rinsing.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Call a physician immediately.
<b>Inhalation</b>	Remove to fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
<b>Ingestion</b>	Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person.
<b>Most important symptoms and effects</b>	Causes burns by all exposure routes. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
<b>Notes to Physician</b>	Treat symptomatically

#### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Carbon dioxide (CO <sub>2</sub> ). Dry chemical. Chemical foam. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	171 °C / 339.8 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	Not applicable
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Oxidizing Properties</b>	Oxidizer
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Oxidizer: Contact with combustible/organic material may cause fire. May ignite combustibles (wood paper, oil, clothing, etc.). Do not allow run-off from fire-fighting to enter drains or water courses.

#### Hazardous Combustion Products

Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Phosgene. Hydrogen chloride gas.

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full

protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

**Health**  
3

**Flammability**  
1

**Instability**  
0

**Physical hazards**  
OX

## 6. Accidental release measures

**Personal Precautions**

Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and Storage

**Handling**

Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face protection. Use only under a chemical fume hood. Do not breathe dust. Do not ingest. If swallowed then seek immediate medical assistance. Keep away from clothing and other combustible materials.

**Storage.**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Do not store near combustible materials. Corrosives area. Incompatible Materials. Acids. Alcohols. Reducing Agent. Strong reducing agents. Combustible material.

## 8. Exposure controls / personal protection

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH	Mexico OEL (TWA)
1,3-Dichloro-5,5-dimethyl hydantoin	TWA: 0.2 mg/m <sup>3</sup> STEL: 0.4 mg/m <sup>3</sup>	(Vacated) TWA: 0.2 mg/m <sup>3</sup> (Vacated) STEL: 0.4 mg/m <sup>3</sup> TWA: 0.2 mg/m <sup>3</sup>	IDLH: 5 mg/m <sup>3</sup> REL = 0.2 mg/m <sup>3</sup> (TWA) STEL: 0.4 mg/m <sup>3</sup>	TWA: 0.2 mg/m <sup>3</sup> STEL: 0.4 mg/m <sup>3</sup>

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment****Eye/face Protection**

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection**

Wear appropriate protective gloves and clothing to prevent skin exposure.

**Respiratory Protection**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

**Recommended Filter type:**

Particulates filter conforming to EN 143.

**Hygiene Measures**

Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

### Appearance

Physical State	Powder Solid
Color	White
Odor	Slight chlorine
Odor Threshold	No information available
Property	<b>Values</b>
Melting Point/Range	132 - 134 °C / 269.6 - 273.2 °F
Softening Point	No data available
Boiling Point/Range	No information available
Flash Point	171 °C / 339.8 °F
Flammability (liquid)	Not applicable
Flammability (solid,gas)	No information available
Explosion Limits	No data available

### Remarks

### • Method

**Method -** No information available  
Solid

Autoignition Temperature	Not applicable
Decomposition Temperature	No data available
pH	~ 4.4
Viscosity	Not applicable
Water Solubility	0.21% (25°C)
Solubility in other solvents	No information available
Partition Coefficient (n-octanol/water)	
Vapor Pressure	No data available
Density / Specific Gravity	No data available
Bulk Density	No data available
Vapor Density	Not applicable
Particle characteristics	No data available

Solid  
practically insoluble

Solid

### Other Information

Molecular Formula	C5 H6 Cl2 N2 O2
Molecular Weight	197.02
Oxidizing Properties	Oxidizer
Evaporation Rate	Not applicable - Solid

## 10. Stability and reactivity

Reactive Hazard	Yes
Stability	Moisture sensitive. Oxidizer: Contact with combustible/organic material may cause fire.
Conditions to Avoid	Incompatible products. Exposure to moist air or water. Combustible material. Exposure to moisture. Excess heat.
Incompatible Materials	Acids, Alcohols, Reducing Agent, Strong reducing agents, Combustible material
Hazardous Decomposition Products	Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Phosgene, Hydrogen chloride gas
Hazardous Polymerization	No information available.
Hazardous Reactions	None under normal processing.

## 11. Toxicological information

### Information on expected route of exposure

<b>Inhalation</b>	May produce an allergic reaction. Avoid breathing dust or spray mist. May be harmful if inhaled.
<b>Ingestion</b>	May cause allergic reaction. May be harmful if swallowed.
<b>Eyes</b>	Avoid contact with eyes. Corrosive to the eyes and may cause severe damage including blindness. Sensitization.
<b>Skin</b>	Avoid contact with skin. Causes burns. Skin Corrosion/Irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

**Toxicology data for the components**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
1,3-Dichloro-5,5-dimethyl hydantoin	542 mg/kg ( Rat )	>20 g/kg ( Rabbit )	-

**Toxicologically Synergistic Products** No information available

**(b) skin corrosion/irritation;** Category 1 B

**(c) serious eye damage/irritation;** Category 1

**(d) respiratory or skin sensitization;**

**Respiratory** No data available  
**Skin** Category 1

No information available

**(e) germ cell mutagenicity;** No data available  
Not mutagenic in AMES Test

**(f) carcinogenicity;**

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	Not listed	Not listed	Not listed	Not listed	Not listed

**(g) reproductive toxicity;** No data available

**(h) STOT-single exposure;** No data available

**(i) STOT-repeated exposure;** No data available

**Target Organs** None known.

**(j) aspiration hazard;** Not applicable  
Solid

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Symptoms / effects, both acute and delayed** Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the

hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing.

**Other Adverse Effects** The toxicological properties have not been fully investigated.

**Endocrine Disrupting Properties** This product does not contain any known or suspected endocrine disruptors.

## 12. Ecological information

### Ecotoxicity

Very toxic to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
1,3-Dichloro-5,5-dimethyl hydantoin	Not listed	LC50 = 0.58 mg/l (96h) Oncorhynchus mykiss (Rainbow trout)	Not listed	EC50 = 0.47 mg/l (48h) Daphnia magna

**Persistence and Degradability** Insoluble in water

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Is not likely mobile in the environment due its low water solubility.

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

UN-No UN3085  
Hazard Class 5.1  
Subsidiary Hazard Class 8  
Packing Group II

### TDG

UN-No UN3085  
Hazard Class 5.1  
Subsidiary Hazard Class 8  
Packing Group II

### IATA

UN-No UN3085  
Proper Shipping Name OXIDIZING SOLID, CORROSIVE, N.O.S.\*  
Hazard Class 5.1  
Subsidiary Hazard Class 8  
Packing Group II

### IMDG/IMO

UN-No UN3085  
Proper Shipping Name Oxidizing solid, corrosive, n.o.s.  
Hazard Class 5.1  
Subsidiary Hazard Class 8  
Packing Group II

## 15. Regulatory Information

### United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	X	ACTIVE	-

Legend:

**TSCA** US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)**

Not applicable

**TSCA 12(b)** - Notices of Export

Not applicable

#### **International Inventories**

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
1,3-Dichloro-5,5-dimethylhydantoin	118-52-5	X	-	204-258-7	X	X	X	X	X	KE-10112

**KECL** - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

#### **U.S. Federal Regulations**

##### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

##### **SARA 311/312 Hazard Categories**

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

##### **CWA (Clean Water Act)**

Not applicable

##### **Clean Air Act**

Not applicable

**OSHA** - Occupational Safety and Health Administration

Not applicable

##### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

##### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

##### **U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
1,3-Dichloro-5,5-dimethylhydantoin	X	X	X	-	X

##### **U.S. Department of Transportation**

Reportable Quantity (RQ):

N

DOT Marine Pollutant

N

DOT Severe Marine Pollutant

N

##### **U.S. Department of Homeland**

This product does not contain any DHS chemicals.



**Security****Other International Regulations****Mexico - Grade** No information available**Authorisation/Restrictions according to EU REACH** Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	-	-	-

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	Not applicable	Not applicable	Not applicable	Not applicable

**Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

**Other International Regulations**

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
1,3-Dichloro-5,5-dimethyl hydantoin	118-52-5	Not applicable	Not applicable	Not applicable	Not applicable

**16. Other Information****Prepared By**Product stewardship (Regulatory Affairs)  
Thermo Fisher Scientific  
email - begel.sdsdesk@thermofisher.com**Creation Date**

03-May-2012

**Revision Date**

19-Dec-2025

**Print Date**

19-Dec-2025

**Revision Summary**

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**