



5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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CNLM-411

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

1.1. Product identifier

Product form	: Substance
Substance name	: 5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%)
EC-No.	: 200-328-6 (Unlabeled)
CAS-No.	: 57-41-0 (Unlabeled)
Product code	: CNLM-411
Formula	: *CC14H12*N2O2
Synonyms	: Phenytoin / 5,5-Diphenyl-2,4-imidazolidinedione

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute Tox. 4 (Oral) H302
Carc. 1A H350
Repr. 1A H360

Full text of hazard classes and H-statements : see section 16

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.1; R45
Repr.Cat.1; R61
Xn; R22

Full text of R-phrases: see section 16

GHS-US classification

Acute Tox. 4 (Oral) H302
Carc. 1B H350
Repr. 1A H360

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Central nervous system, Blood, Gums.

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2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



Signal word (CLP) :

: Danger

Hazard statements (CLP) :

: H302 - Harmful if swallowed
H350 - May cause cancer (in contact with skin, if inhaled, if swallowed)
H360 - May damage the unborn child. (in contact with skin, if inhaled, if swallowed)

Precautionary statements (CLP) :

: P264 - Wash Both hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective clothing, protective gloves.
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P330 - Rinse mouth.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H302 - Harmful if swallowed
H350 - May cause cancer (Dermal, Inhalation, oral)
H360 - (Dermal, Inhalation, oral)

Precautionary statements (GHS-US) :

: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P264 - Wash Both hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective clothing, protective gloves.
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell
P308+P313 - If exposed or concerned: Get medical advice/attention.
P330 - Rinse mouth.
P405 - Store locked up.
P501 - Dispose of contents/container to Comply with applicable regulations

2.3. Other hazards

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%)	(CAS-No.) 57-41-0 (Unlabeled) (EC-No.) 200-328-6 (Unlabeled)	100	Carc.Cat.1; R45 Repr.Cat.1; R61 Xn; R22

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%)	(CAS-No.) 57-41-0 (Unlabeled) (EC-No.) 200-328-6 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Carc. 1A, H350 Repr. 1A, H360

Full text of R- and H- phrases: see section 16

5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%) CNLM-411

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Name	Product identifier	%	GHS-US classification
5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%) (Main constituent)	(CAS-No.) 57-41-0 (Unlabeled)	100	Acute Tox. 4 (Oral), H302 Carc. 1B, H350 Repr. 1A, H360

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Move out of dangerous area. Consult a physician and show this safety data sheet.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eye with water for 15 minutes. Get medical attention.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions	: Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3. Methods and material for containment and cleaning up

For containment : Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed	: Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Personal protective equipment : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.



Eye protection : Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection : When appropriate, use NIOSH/CEN approved respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline
Molecular mass	: 255.25 g/mol (Labeled)
Color	: White
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 293 - 295 °C (559 - 563 °F) - lit
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 0.3 - 0.5 g/cm ³
Solubility	: No data available
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

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10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

Strong oxidizing agents, Water.

10.6. Hazardous decomposition products

Formed under fire conditions: Carbon oxides, Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%) (57-41-0 (Unlabeled))	
LD50 oral rat	1635 mg/kg
ATE CLP (oral)	1635.000 mg/kg body weight

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Possible human carcinogen
Reproductive toxicity	: Presumed human reproductive toxicant.
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Gastrointestinal disturbance. Headache. Nausea. Dizziness. Ataxia. Slurred speech. Blurred vision. Nystagmus. Confusion. Hallucinations. Insomnia.
IARC group	: 2B
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%) (57-41-0 (Unlabeled))	
EC50 Daphnia 1	3.73 mg/l Daphnia magna (Water flea) - 24 h

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : Not classified as dangerous in the meaning of transport regulations.

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%) (57-41-0 (Unlabeled))

SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard Immediate (acute) health hazard
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15.2. International regulations

CANADA

5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%) (57-41-0 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

5,5-DIPHENYLHYDANTOIN (2-13C, 99%; 1,3-15N2, 98%)(57-41-0 (Unlabeled))

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

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SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

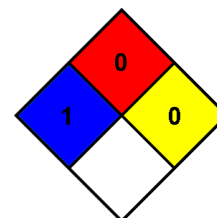
Full text of R-, H- and EUH-phrases:

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Carc. 1A	Carcinogenicity Category 1A
Repr. 1A	Reproductive toxicity Category 1A
H302	Harmful if swallowed
H350	May cause cancer
H360	May damage fertility or the unborn child
R22	Harmful if swallowed
R45	May cause cancer
R61	May cause harm to the unborn child
Xn	Harmful

NFPA health hazard : 1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability : 0 Minimal Hazard

Physical : 0 Minimal Hazard

CIL Substance SDS

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product