



Section 1 – Chemical Product

MSDS Name: 5,5-Dimethylhydantoin (DMH) 99.5%

Synonym: 5,5-Dimethyl-2,4-Imidazolidinedione.

Section 2 – COMPOSITION, INFORMATION ON INGREDIENTS

CAS#	Chemical Name	content	EINECS#
77-71-4	5,5-Dimethylhydantoin	99.5	201-051-3

Hazard Symbols: None Listed.

Risk Phrases: None Listed.

Section 3 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

The toxicological properties of this material have not been fully investigated.

Potential Health Effects

Eye:

May cause eye irritation.

Skin:

May cause skin irritation.

Ingestion:

May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Low hazard for usual industrial handling.

Inhalation:

May cause respiratory tract irritation. Low hazard for usual industrial handling.

Chronic:

No information found.

➤ Section 4 – FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2–4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration.

If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Notes to Physician:

➤ Section 5 – FIRE FIGHTING MEASURES

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Use water spray, dry chemical, carbon dioxide, or chemical foam. Use agent most appropriate to extinguish fire.

➤ Section 6 – ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Clean up spills

immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions.

Provide ventilation.

➤ Section 7 – HANDLING and STORAGE

Handling:

Wash thoroughly after handling. Wash hands before eating. Use with adequate ventilation. Minimize dust generation and accumulation.

Avoid breathing dust, vapor, mist, or gas. Do not get on skin or in eyes. Avoid ingestion and inhalation.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

➤ Section 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls:

Use adequate ventilation to keep airborne concentrations low.

Exposure Limits CAS# 77-71-4: Personal Protective Equipment Eyes: 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:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

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.

➤ Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Crystalline powder

Color: white

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 176 – 178 deg C

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits, lower: Not available.

Explosion Limits, upper: Not available.

Decomposition Temperature:

Solubility in water: soluble in ethanol, ethylether, acetone

Specific Gravity/Density:

Molecular Formula: C₅H₈N₂O₂

Molecular Weight: 128.13

➤ Section 10 – STABILITY AND REACTIVITY

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials:

Strong oxidizing agents.

Hazardous Decomposition Products:

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

➤ Section 11 – TOXICOLOGICAL INFORMATION

RTECS#:

CAS# 77-71-4: MU0977000 LD50/LC50:

CAS# 77-71-4: Oral, rabbit: LD50 = 12660 mg/kg; Oral, rat: LD50 = 7800 mg/kg.

Carcinogenicity:

5,5-Dimethylhydantoin – Not listed by ACGIH, IARC, or NTP.

Other:

See actual entry in RTECS for complete information.

➤ Section 12 – ECOLOGICAL INFORMATION

➤ Section 13 – DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

➤ Section 14 – TRANSPORT INFORMATION

IATA

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing Group:

IMO

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing Group:

RID/ADR

Shipping Name: Not regulated.

Hazard Class:

UN Number:

Packing group:

➤ Section 15 – REGULATORY INFORMATION

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available.

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 77-71-4: No information available.

Canada

CAS# 77-71-4 is listed on Canada's DSL List.

CAS# 77-71-4 is not listed on Canada's ingredient Disclosure List.

US FEDERAL

TSCA

CAS# 77-71-4 is listed on the TSCA inventory.