



CRYOTECH QS50[®]

Solid Runway Deicer

Safety Data Sheet

Section 1: IDENTIFICATION

PRODUCT IDENTIFIER

CRYOTECH QS50

Solid Runway Deicer

Complies with Specification AMS1431

RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Deicing/anti-icing runways, taxiways, and airside pavements

DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name/Address: Cryotech Deicing Technology
6103 Orthoway
Fort Madison, IA 52627
United States

Contact Information: Telephone: (800) 346-7237
Fax: (319) 372-2662
Email: deicers@cryotech.com
Website: www.cryotech.com

EMERGENCY TELEPHONE NUMBER

CHEMTREC (800) 424-9300
Outside USA and Canada (703) 741-5970

Section 2: HAZARD(S) IDENTIFICATION

CLASSIFICATION ACCORDING TO OSHA HAZCOM 2012

Hazard Class Not classified as hazardous

LABEL ELEMENTS ACCORDING TO OSHA HAZCOM 2012

There are no OSHA required label elements for this product.

CLASSIFICATION ACCORDING TO WHMIS (Canada)

Hazard Class Not controlled
WHMIS Hazard Symbols Not applicable
WHMIS Signal Word Not applicable

HAZARDS NOT OTHERWISE CLASSIFIED (HNOC)

May be harmful if swallowed.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

MIXTURES

Ingredient	CAS No	Wt. %
Sodium Acetate – anhydrous	127-09-3	30-70
Sodium Formate	141-53-7	30-70
Corrosion Inhibitors		< 2



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Section 4: FIRST- AID MEASURES

DESCRIPTION OF FIRST AID MEASURE

Eye	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. If irritation persists, seek medical attention.
Skin	As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.
Inhalation	If inhaled, remove to fresh air. Get medical advice if cough or other symptoms appear.
Ingestion	If swallowed, give milk or water to drink and telephone for medical advice. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

MOST IMPORTANT SYMPTOMS / EFFECTS

Eye	May cause temporary eye irritation. Symptoms may include temporary discomfort, excessive blinking, tear production, redness, and/or swelling.
Skin	May cause itching or irritation of any cut or abraded skin. Symptoms of prolonged contact may include dry skin.
Inhalation	Inhalation of dust during handling may cause respiratory tract irritation and coughing. This product is not otherwise expected to be an inhalation hazard.
Ingestion	Ingestion of large quantities may cause nausea, vomiting, diarrhea, and abdominal discomfort.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT

Specific treatments	If you feel unwell, seek medical advice immediately. Treat symptomatically.
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Section 5: FIRE FIGHTING MEASURES

FLAMMABILITY

Flash Point (close cup)	Nonflammable by OSHA/WHMIS criteria
Auto Ignition	Data not available

EXTINGUISHING MEDIA

Suitable Extinguishing Media	Water, carbon dioxide, or dry chemical. Use extinguishing media appropriate for the surrounding environment.
Unsuitable Extinguishing Media	Not applicable

SPECIAL HAZARDS

Hazardous Combustion Products	Normal combustion forms carbon dioxide and water.
Explosion Limits	Data not available. Not expected to be an explosion hazard.
Unusual Fire Hazards	None expected

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS

Wear protective equipment suitable for the surrounding environment.



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Section 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

Avoid eye/skin contact with spilled material. Refer to Section 7 for additional handling precautions

Methods for Containment	If material is dissolved, contain and/or absorb spill with inert material (e.g. sawdust, sand, vermiculite).
Methods for Cleaning-Up	Scoop up material and transfer to disposal container. If needed, wash spillage area with plenty of water. Avoid generating dust.

Section 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING

Handling	Avoid eye contact. Avoid breathing dust when handling.
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PRECAUTIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage	Store in tightly sealed original containers, away from direct heat and strong oxidizing agents. Do not store or handle product in systems constructed of wetted parts consisting of galvanized steel, zinc, or brass components. Very hygroscopic; protect from moisture.
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Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

TWA PEL:	No specific limits have been established for this product. As a guideline, OSHA (United States) has established the following limits which are generally recognized for inert or nuisance dust. Particulates Not Otherwise Regulated (PNOR): 8-hr TWA limits of 15 mg/m ³ (total particulate) and 5 mg/m ³ (respirable fraction).
TWA TLV:	No specific limits have been established for this product. As a guideline, ACGIH (United States) has established the following limits which are generally recognized for inert or nuisance dust. Particulates (insoluble) Not Otherwise Classified (PNOC): 8-hr TWA limits of 10 mg/m ³ (as total dust) and 3 mg/m ³ (as respirable).

EXPOSURE CONTROLS

Engineering Controls	No special ventilation is usually necessary; however if operating conditions create high concentrations of this material, special ventilation may be needed to keep exposure to airborne contaminants below the exposure limit.
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INDIVIDUAL PROTECTIVE MEASURES/PERSONAL PROTECTIVE EQUIPMENT

Eye Protection	Safety glasses or goggles are recommended if eye contact is possible.
Skin Protection	No special skin protection is usually necessary. Chemical-resistant gloves should be used if prolonged exposure is possible to prevent drying of skin.
Respiratory Protection	No special respiratory protection is usually necessary. Breathing of dust should be avoided. If operating conditions create high airborne concentrations of this material, the use of an approved respirator is recommended.



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Section 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	White to gray granules and spherical pellets
ODOR	Odorless to slight vinegar odor
ODOR THRESHOLD	No data available
pH (20°C, 68°F)	9-11.5 (15% aqueous solution)
MELTING POINT	324°C Sodium Acetate, 258°C Sodium Formate
BOILING POINT	Not applicable
FLASH POINT	Not applicable
EVAPORATION RATE	Not applicable
FLAMMABILITY/EXPLOSION LIMITS	Not applicable
VAPOR PRESSURE (20°C)	Not applicable
VAPOR DENSITY (AIR = 1)	Not applicable
RELATIVE DENSITY	>1
SOLUBILITY IN WATER	Partially soluble in water
PARTITION COEFFICIENT; n-OCTANOL/WATER	Data not available
AUTO-IGNITION TEMPERATURE	Data not available
DECOMPOSITION TEMPERATURE	>400°C
VISCOSITY (20°C)	Not applicable
OXIDIZING PROPERTIES	Not oxidizing
EXPLOSIVE PROPERTIES	Not explosive

Section 10: STABILITY AND REACTIVITY

REACTIVITY

No dangerous reactions known under conditions of normal use.

CHEMICAL STABILITY

Stable. Polymerization will not occur.

POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reactions known under conditions of normal use.

CONDITIONS TO AVOID

Avoid prolonged contact with reactive metals such as magnesium and zinc, especially in closed systems where hydrogen gas from the oxidation of these materials may accumulate over time.

INCOMPATIBLE MATERIALS

Strong oxidizing agents; strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

May decompose into oxides of carbon.



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Section 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

LD50 rat-oral: > 5 g/kg (sodium acetate); > 3 g/kg (sodium formate)

LD50 mouse-oral: > 11 g/kg (sodium formate)

LD50 rat-dermal: > 2 g/kg (sodium formate)

LC50 rat-inhalation: > 0.67 mg/m³ (maximum attainable dust concentration of sodium formate) produced no signs of toxicity

LIKELY ROUTES OF EXPOSURE

Skin contact, eye contact, ingestion.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL, AND TOXICOLOGICAL CHARACTERISTICS

Eye	May cause temporary eye irritation. Corneal injury is unlikely.
Skin	Repeated contact may cause minor skin irritation or dry skin.
Inhalation	Inhalation of dust during handling may cause respiratory tract irritation and coughing. This product is not otherwise expected to be an inhalation hazard.
Ingestion	Ingestion of large quantities may cause nausea, vomiting, diarrhea and abdominal discomfort.

DELAYED AND IMMEDIATE EFFECTS AND CHRONIC EFFECTS FROM SHORT- AND LONG-TERM EXPOSURE/NUMERICAL MEASURES OF TOXICITY

Skin Corrosion/Irritation	Based on available data, the classification criteria are not met.
Serious Eye Damage/Irritation	Based on available data, the classification criteria are not met.
Respiratory or Skin Sensitization	Based on available data, the classification criteria are not met.
Germ Cell Mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	This product does not contain any ingredients that are considered to be carcinogens by IARC, NTP, or OSHA.
Reproductive Toxicity	Based on available data, the classification criteria are not met.
STOT-Single Exposure	Based on available data, the classification criteria are not met.
STOT-Repeated Exposure	Based on available data, the classification criteria are not met.
Aspiration Hazard	Based on available data, the classification criteria are not met.

Section 12: ECOLOGICAL INFORMATION

ECOTOXICITY (AQUATIC AND TERRESTRIAL)

Acute Fish Toxicity (Pimephales promelas, static system 96 hr LC50): 8025 mg/L

Acute Daphnid Toxicity (Daphnia magna, static system 48 hr LC50): 4250 mg/L

PERSISTENCE AND DEGRADABILITY

Biodegradable. COD (TOD): 0.30 kg O₂/kg deicer; BOD₅ (20°C): 0.05 kg O₂/kg deicer

BIOACCUMULATIVE POTENTIAL

Bioaccumulation is not expected.

MOBILITY IN SOIL

Adverse effects not expected.

OTHER ADVERSE EFFECTS

None expected.



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Section 13: DISPOSAL CONSIDERATIONS

WASTE TREATMENT AND METHODS OF DISPOSAL

Based on available information, this product is neither listed as a hazardous waste nor does it exhibit any of the characteristics that would cause it to be classified as a characterized hazardous waste under RCRA. This product may be disposed of in a sanitary landfill unless local, state, or provincial regulations prohibit such disposal.

Section 14: TRANSPORT INFORMATION

TRANSPORT INFORMATION

Not regulated as dangerous goods per US DOT or IATA.

Section 15: REGULATORY INFORMATION

INVENTORY LISTS

All of the components in this product are on the following inventory lists: USA (TSCA), Canada (DSL/NDSL); Europe (EINECS)

TSCA SECTION 12(b)

None of the chemicals in this product are listed under TSCA Section 12(b).

CERCLA HAZARDOUS SUBSTANCES

There is no CERCLA Reportable Quantity for this material.

SARA 311/312 CATEGORIES

Physical hazards	
Explosive	No
Flammable (gases, aerosols, liquids or solids)	No
Oxidizer (liquid, solid or gas)	No
Self- reactive	No
Pyrophoric (liquid or solid)	No
Pyrophoric Gas	No
Self-heating	No
Corrosive to metal	No
Gas under pressure (compressed gas)	No
In contact with water emits flammable gas	No
Combustible Dust	No
Hazard Not Otherwise Classified (HNOC)	No

Health hazards	
Acute toxicity (any route of exposure)	No
Skin corrosion or irritation	No
Serious eye damage or eye irritation	No
Respiratory or skin sensitization	No
Germ cell mutagenicity	No
Carcinogenicity	No
Reproductive toxicity	No
Specific target organ toxicity (single or repeated exposure)	No
Aspiration hazard	No
Simple Asphyxiant	No
Hazard Not Otherwise Classified (HNOC)	No

SARA 313

None of the components in this product are subject to reporting under SARA Section 313.

CLEAN WATER ACT

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.



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STATE RIGHT-TO-KNOW:

To the best of our knowledge, this product does not contain components at levels which are required to be reported under the statutes of the following states: PA, MA, MN, and NJ.

This product does not contain materials known to the State of California (Proposition 65) to cause cancer and/or reproductive harm at levels which would require a warning under the statute.

NFPA 704	
Health	1
Fire	0
Physical Hazard	0
Hazard Rating 0-4 0-least hazardous; 4-most hazardous	

HMIS – Hazardous Materials Identification System	
Health	1
Fire	0
Physical Hazard	0
Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = serious, 4 = severe	

Section 16: OTHER INFORMATION

SDS REVISION DATE

Revision date: December 21, 2021

Expiration date: December 21, 2021

Latest version of this SDS can be obtained from Cryotech.

NOTE TO EMPLOYER

This Safety Data Sheet contains environmental, health and toxicology information for your employees. Please ensure this information is provided to them. It also contains information to help you meet community right-to-know/emergency response reporting requirements under SARA Title III and many other laws. If you resell this product, this SDS must be given to the buyer or the information incorporated in your SDS. Discard any previous edition of this SDS.

DISCLAIMER

The above information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change and the conditions of handling and use or misuse are beyond our control, GENERAL ATOMICS INTERNATIONAL SERVICES CORPORATION dba Cryotech Deicing Technology makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. GENERAL ATOMICS INTERNATIONAL SERVICES CORPORATION dba Cryotech Deicing Technology assumes no responsibility for any injury or loss resulting from the use of the product described herein. User should satisfy himself that he has all current data relevant to his particular use.

End of Safety Data Sheet



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SMI, Inc.

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Phone: (305) 971-7047
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Attn: Quality Manager
Cryotech Deicing Technology
6103 Orthoway
Ft Madison, IA 52627-9415

Date: 21-Jul-2021

SMI/REF: 2104-685

Product: QS50 (Lot# CDTQ1A) (received 11-May-2021)

Dilution: Per specification

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AMS 1431E SOLID RUNWAY DEICING/ANTI-ICING PRODUCT Periodic Tests

4.2.2 Periodic Tests

3.2.5	Effect on Transparent Plastics	<u>Conforms</u>
3.2.6	Effect on Painted Surfaces	<u>Conforms</u>
3.2.7	Effect on Unpainted Surfaces	<u>Conforms</u>
3.2.8	Effect on Runway Pavements	
3.2.8.1	Runway Concrete Surface Scaling Resistance	<u>Conforms</u>
3.2.8.2	Asphalt Concrete Degradation Resistance	<u>¹Not performed by SMI</u>
3.2.9	Effect on Aircraft Metals:	
3.2.9.1	Sandwich Corrosion	<u>Conforms</u>
3.2.9.2	Total Immersion Corrosion	<u>Conforms</u>
3.2.9.3	Low Embrittling Cadmium Plate	<u>Conforms</u>
3.2.9.3.1	Cyclic Immersion Corrosion of Cadmium Plate	<u>Informational</u>
3.2.9.4	Hydrogen Embrittlement	<u>Conforms</u>
3.2.9.5	Stress Corrosion Resistance	
	AMS 4911	<u>Conforms</u>
	AMS 4916	<u>Informational</u>

¹Testing required for deicer /anti-icer products used in Europe. This test is not performed by SMI.

Respectfully submitted,

Patricia D. Viani, SMI Inc.

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