


# Master Purchase Order

<b>DO NOT INVOICE TO THIS ADDRESS</b>		Master Purchase Order No. 0047A0114	
City & County of Denver		Date: 04/16/2014	Revision No.
Purchasing Division		Payment Terms: Net 30	Ordinance (as applicable):
201 West Colfax Avenue, Dept. 304		Freight Terms: DESTINATION	
Denver, CO 80202		Ship Via: Best	
United States		Buyer: Curtis Subia, CPPB	
Phone: 720-913-8100 Fax: 720-913-8101		Phone/email: 303-342-2113 / curtis.subia@denvergov.org	

Vendor: 0000030106      Phone: 800-346-7237      Cell: 319-371-7083      Email: Jane.Holterhaus@cryotech.com

**GENERAL ATOMICS INTERNATIONAL SERVICES CORP**  
 dba Cryotech Deicing Technology  
 6103 Orthoway  
 Fort Madison, IA 52627  
 Attn: Jane Holterhaus

Ship To: Denver International Airport  
 27500 E 80<sup>th</sup> Ave  
 Denver, CO 80249

Bill To: Denver International Airport  
 8500 Pena Blvd  
 Attn: Accts Payable  
 Denver, Co 80249

**1. Goods/Services:**

GENERAL ATOMICS INTERNATIONAL SERVICES CORP dba Cryotech Deicing Technology, a Delaware Corporation, (“Vendor”) shall provide the goods, and any services related thereto, identified and described on attached **Exhibit A**, to the City and County of Denver, a Colorado municipal corporation (the “City”), all in accordance with the terms and conditions of this Master Purchase Order.

**2. Ordering:**

The City shall purchase one or more of the goods/services by issuing a written purchase order(s) or similar appropriate written document (“Order”), each of which will be deemed incorporated into this Agreement for purposes of such Order only.

**3. Pricing:**

The pricing/rates for the goods/services is contained on **Exhibit A** and shall be held firm for the term of this Master Purchase Order.

**4. Term:**

The term of this Master Purchase Order shall run from Date of City Signature to and including May 31, 2015.

**5. Extension or Renewal:**

It is also a specific provision of this Master Purchase Order that the City and the vendor may mutually agree to renew and continue the contract or agreement consummated under this Master Purchase Order for additional periods of one year at the same prices, terms and conditions. However, no more than three (3) yearly extensions shall be made to the original Master Purchase Order.

**6. Non-Exclusive:**

This Master Purchase Order is non-exclusive. City does not guarantee any minimum purchase other than as provided herein.

**7. Inspection and Acceptance:**

City may inspect all goods/services prior to acceptance. Payment does not constitute acceptance. Vendor shall bear the cost of any inspection/testing that reveal goods/services that are defective or do not meet specifications. City’s failure to accept or reject goods/services shall not relieve Vendor from its responsibility for such goods/services that are defective or do not meet specifications nor impose liability on City for such goods/services. If any part of the goods/services are not acceptable to City, City may, in addition to any other rights it may have at law or in equity: (1) make a warranty claim; (2) repair and/or replace the goods or substitute other services at Vendor’s expense; or (3) reject and return the goods at Vendor’s cost and/or reject the services at Vendor’s expense for full credit. Any rejected goods/services are not to be replaced without written authorization from City, and any such replacement shall be on the same terms and conditions contained in this Master Purchase Order. Vendor shall perform all services in accordance with the standard of care exercised by highly competent vendors who perform like or similar services.

**8. Shipping, Taxes and Other Credits and Charges:**

All pricing is F.O.B. destination unless otherwise specified. Shipments must be marked with Vendor’s name, the Master Purchase Order number, and contain a delivery or packing slip. Vendor shall not impose any charges for boxing, crating, parcel post, insurance, handling, freight, express or other similar charges or fees. Vendor shall notify City in writing of any price decreases immediately, and City shall receive the benefit thereof on all unshipped items. Vendor shall comply with any additional delivery terms specified herein. Vendor shall be responsible for the cleanup and reporting of any contamination (environmental or otherwise) or spillage resulting from the delivery and/or unloading of goods within twenty-four (24) hours of the contamination or spillage or sooner if required by law. Vendor shall procure all permits and licenses; pay all charges, taxes and fees; and give all notices necessary and incidental to the fulfillment of this Master Purchase Order and all cost thereof have been included in the prices contained herein. City shall not be liable for the payment of taxes, late charges or penalties of any nature, except as required by D.R.M.C. § 20-107, et seq. The price of all goods/services shall reflect all applicable tax exemptions. City’s Federal Registration No. is 84-6000580 and its State Registration No. is 98-02890. Vendor shall pay all sales and use taxes levied by City on any tangible personal property built into the goods/services. Vendor shall obtain a Certificate of Exemption from the State of

Colorado Department of Revenue prior to the purchase of any materials to be built into the goods/services and provide a copy of the Certificate to City prior to final payment.

**9. Risk of Loss:**

Vendor shall bear the risk of loss, injury or destruction of goods prior to delivery to City. Loss, injury or destruction shall not release Vendor from any obligation hereunder.

**10. Invoice:**

Each invoice shall include: (i) the Master Purchase Order number; (ii) individual itemization of the goods/services; (iii) per unit price, extended and totaled; (iv) quantity ordered, back ordered and shipped; (v) an invoice number and date; (vi) ordering department's name and "ship to" address; and (vii) agreed upon payment terms set forth herein.

**11. Payment:**

Payment shall be subject to City's Prompt Payment Ordinance D.R.M.C. § 20-107, et-seq. after City accepts the goods/services. Any other provision of this Agreement notwithstanding, in no event shall the City be liable for aggregate payments under this Master Purchase Order in excess of Twenty Million Dollars (\$20,000,000.00). The Vendor acknowledges that any goods/services provided beyond those specifically described in **Exhibit A** are performed at Contractor's risk and without authorization from the City. City's payment obligations hereunder, whether direct or contingent, shall extend only to funds appropriated by the Denver City Council for the purpose of this Master Purchase Order, encumbered by the City after receipt of Vendor's invoice and paid into the Treasury of City. Vendor acknowledges that: (i) City does not by this Master Purchase Order, irrevocably pledge present cash reserves for payments in future fiscal years; and (ii) this Master Purchase Order is not intended to create a multiple-fiscal year direct or indirect debt or financial obligation of City. City may setoff against any payments due to Vendor any claims and/or credits it may have against Vendor under this Master Purchase Order.

**12. Amendments/Changes:**

Only the Manager of General Services or his delegate is authorized to change or amend this Master Purchase Order by a formal written change order. Any change or amendment that would cause the aggregate payable under this Master Purchase Order to exceed the amount appropriated and encumbered for this Master Purchase Order is expressly prohibited and of no effect. Vendor shall verify that the amount appropriated and encumbered is sufficient to cover any increase in cost due to changes or amendments. Goods/services provided without such verification are provided at Vendor's risk. The Vendor has no authority to bind City on any contractual matters.

**13. Warranty:**

Vendor warrants and guarantees to City that all goods furnished under this Master Purchase Order are free from defects in workmanship and materials, are merchantable, and fit for the purposes for which they are to be used. For any goods furnished under this Master Purchase Order which become defective within twelve (12) months (unless otherwise specified) after date of receipt by City, Vendor shall either, at City's election and to City's satisfaction, remedy any and all defects or replace the defective goods at no expense to City within seven (7) days of receipt of the defective goods or accept the defective goods for full credit and payment of any return shipping charges. Vendor shall be fully responsible for any and all warranty work, regardless of third party warranty coverage. Vendor shall furnish additional or replacement parts at the same prices, conditions and specifications delineated herein.

**14. Indemnification/Limitation of Liability:**

Vendor shall indemnify and hold harmless City (including but not limited to its employees, elected and appointed officials, agents and representatives) against any and all losses (including without limitation, loss of use and costs of cover), liability, damage, claims, demands, actions and/or proceedings and all costs and expenses connected therewith (including without limitation attorneys' fees) that arise out of or relate to any claim of infringement of patent, trademark, copyright, trade secret or other intellectual property right related to this Master Purchase Order or that are caused by or the result of any act or omission of Vendor, its agents, suppliers, employees, or representatives. Vendor's obligation shall not apply to any liability or damages which result solely from the negligence of City. City shall not be liable for any consequential, incidental, indirect, special, reliance, or punitive damages or for any lost profits or revenues, regardless of the legal theory under which such liability is asserted. In no event shall City's aggregate liability exceed the agreed upon cost for those goods/services that have been accepted by City under this Master Purchase Order. Notwithstanding anything contained in this Master Purchase Order to the contrary, City in no way limits or waives the rights, immunities and protections provided by C.R.S. § 24-10-101, et seq.

**15. Termination:**

City may terminate this Master Purchase Order, in whole or in part, at any time and for any reason immediately upon written notice to Vendor. In the event of such a termination, City's sole liability shall be limited to payment of the amount due for the goods/services accepted by City. Vendor acknowledges the risks inherent in this termination for convenience and expressly accepts them. Termination by City shall not constitute a waiver of any claims City may have against Vendor.

**16. Interference:**

Vendor shall notify the Director of Purchasing immediately of any condition that may interfere with the performance of Vendor's obligations under this Master Purchase Order and confirm such notification in writing within twenty-four (24) hours. City's failure to respond to any such notice shall in no way act as a waiver of any rights or remedies City may possess.

**17. Venue, Choice of Law and Disputes:**

Venue for all legal actions shall lie in the District Court in and for City and County of Denver, State of Colorado, and shall be governed by the laws of the State of Colorado as well as the Charter and Revised Municipal Code, rules, regulations, Executive Orders, and fiscal rules of City. All disputes shall be resolved by administrative hearing, pursuant to the procedure established by D.R.M.C. § 56-106. Director of Purchasing shall render the final determination.

**18. Assignment/No Third Party Beneficiary:**

Vendor shall not assign or subcontract any of its rights or obligations under this Master Purchase Order without the written consent of City. In the event City permits an assignment or subcontract, Vendor shall continue to be liable under this Master Purchase Order and any permitted assignee or subcontractor shall be bound by the terms and conditions contained herein. This Master Purchase Order is intended solely for the benefit of City and Vendor with no third party beneficiaries

**19. Notice:**

Notices shall be made by Vendor to the Director of Purchasing and by City to Vendor at the addresses provided herein, in writing sent registered, return receipt requested.

**20. Compliance With Laws:**

Vendor shall observe and comply with all federal, state, county, city and other laws, codes, ordinances, rules, regulations and executive orders related to its performance under this Master Purchase Order. City may immediately terminate this Master Purchase Order, in whole or in part, if Vendor or an employee is convicted, plead nolo contendere, or admits culpability to a criminal offense of bribery, kickbacks, collusive bidding, bid-rigging, antitrust, fraud, undue influence, theft, racketeering, extortion or any offense of a similar nature.

**21. Insurance:**

Vendor shall secure, before delivery of any goods/services, the following insurance covering all operations, goods and services provided to City. Vendor shall keep the required insurance coverage in force at all times during the term of the Purchase Order, or any extension thereof, during any warranty period, and for three (3) years after termination of this Purchase Order. The required insurance shall be underwritten by an insurer licensed to do business in Colorado and rated by A.M. Best Company as "A-"VIII or better. Each policy shall contain a valid provision or endorsement requiring notification to the City in the event any of the required policies be canceled or non-renewed before the expiration date thereof. Such written notice shall be sent to the parties identified in the Notices section of this Agreement. Such notice shall reference the City contract number listed on the signature page of this Agreement. Said notice shall be sent thirty (30) days prior to such cancellation or non-renewal unless due to non-payment of premiums for which notice shall be sent ten (10) days prior. If such written notice is unavailable from the insurer, contractor shall provide written notice of cancellation, non-renewal and any reduction in coverage to the parties identified in the Notices section by certified mail, return receipt requested within three (3) business days of such notice by its insurer(s) and referencing the City's contract number. If any policy is in excess of a deductible or self-insured retention, City must be notified by Vendor. Vendor shall be responsible for the payment of any deductible or self-insured retention. The insurance coverages specified in this Purchase Order are the minimum requirements, and these requirements do not lessen or limit the liability of Vendor. Vendor shall provide a copy of this Purchase Order to its insurance agent or broker. Vendor may not commence services or work relating to the Purchase Order prior to placement of coverage. Contractor certifies that the attached certificate of insurance attached to the Purchase Order documents, preferably an ACORD certificate, complies with all insurance requirements of this Purchase Order. The City's acceptance of a certificate of insurance or other proof of insurance that does not comply with all insurance requirements set forth in this Purchase Order shall not act as a waiver of Vendor's breach of this Purchase Order or any of the City's rights or remedies under this Agreement. The City's Risk Management Office may require additional proof of insurance, including but not limited to policies and endorsements. Vendor's insurer shall name as Additional Insured to its Commercial General Liability and Business Auto Liability policies the City and County of Denver, its elected and appointed officials, employees and volunteers. Vendor's insurer shall waive subrogation rights against the City. All sub-contractors and sub-consultants (including independent contractors, suppliers or other entities providing goods/services required by this Purchase Order) shall be subject to all of the requirements herein and shall procure and maintain the same coverages required of Vendor. Vendor shall include all such entities as insureds under its policies or shall ensure that they all maintain the required coverages. Vendor shall provide proof of insurance for all such entities upon request by City. For Worker's Compensation Insurance, Vendor shall maintain the coverage as required by statute for each work location and shall maintain Employer's Liability insurance with limits of \$100,000 for each bodily injury occurrence claim, \$100,000 for each bodily injury caused by disease claim, and \$500,000 aggregate for all bodily injuries caused by disease claims. Vendor expressly represents to City, as a material representation upon which City is relying, that none of the Vendor's officers or employees who may be eligible under any statute or law to reject Workers' Compensation Insurance shall effect such rejection during any part of the term of this Purchase Order, and that any such rejections previously effected, have been revoked. Vendor shall maintain Commercial General Liability coverage with limits of \$1,000,000 for each occurrence, \$1,000,000 for each personal and advertising injury claim, \$2,000,000 products and completed operations aggregate, and \$2,000,000 policy aggregate. Vendor shall maintain Business Auto Liability

coverage with limits of \$1,000,000 combined single limit applicable to all owned, hired and non-hired vehicles used in performing services under this Purchase Order. For Commercial General Liability coverage, the policy must provide the following: (i) That this Purchase Order is an Insured Contract under the policy; (ii) Defense costs in excess of policy limits (iii) A severability of interests, separation of insureds or cross liability provision; and (iv) A provision that coverage is non-contributory with other coverage or self-insurance provided by City. For claims-made coverage, the retroactive date must be on or before the first date when any goods or services were provided to City. Vendor must advise the City in the event any general aggregate or other aggregate limits are reduced below the required per occurrence limits. At their own expense, and where such general aggregate or other aggregate limits have been reduced below the required per occurrence limit, the Contractor will procure such per occurrence limits and furnish a new certificate of insurance showing such coverage is in force.

**22. Severability:**

If any provision of this Master Purchase Order, except for the provisions requiring appropriation and encumbering of funds and limiting the total amount payable by City, is held to be invalid, illegal or unenforceable by a court of competent jurisdiction, the validity of the remaining portions or provisions shall not be affected if the intent of City and Vendor can be fulfilled.

**23. Survival:**

All terms and conditions of this Master Purchase Order which by their nature must survive termination/expiration shall so survive. Without limiting the foregoing, Vendor's insurance, warranty and indemnity obligations shall survive for the relevant warranty or statutes of limitation period plus the time necessary to fully resolve any claims, matters or actions begun within that period. Bonds shall survive as long as any warranty period.

**24. No Construction Against Drafting Party:**

No provision of this Master Purchase Order shall be construed against the drafter.

**25. Status of Vendor/Ownership of Work Product:**

Vendor is an independent contractor retained on a contractual basis to perform services for a limited period of time as described in Section 9.1.1E(x) of the Charter of City. Vendor and its employees are not employees or officers of City under Chapter 18 of the D.R.M.C. for any purpose whatsoever. All goods, deliverables, hardware, software, plans, drawings, reports, submittals and all other documents or things furnished to City by Vendor shall become and are the property of City, without restriction.

**26. Records and Audits:**

Vendor shall maintain for three (3) years after final payment hereunder, all pertinent books, documents, papers and records of Vendor involving transactions related to this Master Purchase Order, and City shall have the right to inspect and copy the same.

**27. Remedies/Waiver:**

No remedy specified herein shall limit any other rights and remedies of City at law or in equity. No waiver of any breach shall be construed as a waiver of any other breach.

**28. No Discrimination in Employment:**

Vendor shall not refuse to hire, discharge, promote or demote, or to discriminate in matters of compensation against any person otherwise qualified, solely because of race, color, religion, national origin, gender, age, military status, sexual orientation, marital status, or physical or mental disability; and Vendor shall insert the foregoing provision in any subcontracts hereunder.

**29. Use, Possession or Sale of Alcohol or Drugs:**

Vendor shall cooperate and comply with the provisions of Executive Order 94. Violation may result in City terminating this Master Purchase Order or barring Vendor from City facilities or from participating in City operations.

**30. Conflict of Interest:**

No employee of City shall have any personal or beneficial interest in the goods/services described in this Master Purchase Order; and Vendor shall not hire or contract for services any employee or officer of City which would be in violation of City's Code of Ethics, D.R.M.C. §2-51, et seq. or the Charter §§ 1.2.8, 1.2.9, and 1.2.12.

**31. No Employment of Illegal Aliens to Perform Work Under The Agreement:**

a. This Agreement is subject to Division 5 of Article IV of Chapter 20 of the Denver Revised Municipal Code, and any amendments (the "Certification Ordinance").

b. The Contractor certifies that:

- (1) At the time of its execution of this Agreement, it does not knowingly employ or contract with an illegal alien who will perform work under this Agreement.
- (2) It will participate in the E-Verify Program, as defined in § 8-17.5-101(3.7), C.R.S., to confirm the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement.

c. The Contractor also agrees and represents that:

- (1) It shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.
- (2) It shall not enter into a contract with a subconsultant or subcontractor that fails to certify to the Contractor that it shall not knowingly employ or contract with an illegal alien to perform work under the Agreement.
- (3) It has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement, through participation in the E-Verify Program.

- (4) It is prohibited from using the E-Verify Program procedures to undertake pre-employment screening of job applicants while performing its obligations under the Agreement, and that otherwise requires the Contractor to comply with any and all federal requirements related to use of the E-Verify Program including, by way of example, all program requirements related to employee notification and preservation of employee rights.
- (5) If it obtains actual knowledge that a subconsultant or subcontractor performing work under the Agreement knowingly employs or contracts with an illegal alien, it will notify such subconsultant or subcontractor and the City within three (3) days. The Contractor will also then terminate such subconsultant or subcontractor if within three (3) days after such notice the subconsultant or subcontractor does not stop employing or contracting with the illegal alien, unless during such three-day period the subconsultant or subcontractor provides information to establish that the subconsultant or subcontractor has not knowingly employed or contracted with an illegal alien.
- (6) It will comply with any reasonable request made in the course of an investigation by the Colorado Department of Labor and Employment under authority of § 8-17.5-102(5), C.R.S, or the City Auditor, under authority of D.R.M.C. 20-90.3.

d. The Contractor is liable for any violations as provided in the Certification Ordinance. If Contractor violates any provision of this section or the Certification Ordinance, the City may terminate this Agreement for a breach of the Agreement. If the Agreement is so terminated, the Contractor shall be liable for actual and consequential damages to the City. Any such termination of a contract due to a violation of this section or the Certification Ordinance may also, at the discretion of the City, constitute grounds for disqualifying Contractor from submitting bids or proposals for future contracts with the City.

This Master Purchase Order is acknowledged and agreed to by:

Vendor Name: GENERAL ATOMICS INTERNATIONAL  
SERVICES CORPORATION  
dba Cryotech Deicing Technology  
(Company Name)

City & County of Denver, Purchasing Division

By:

  
(Authorized Signature)

By:



Print Name:

Keith L. Johnson

Print Name:

Curtis Subia

Title:

President and CEO

Title:

Associate Buyer

Date:

4/17/14

Date:

4/21/2014

EXHIBIT "A"

Vendor: GENERAL ATOMICS INTERNATIONAL SERVICES CORP  
dba Cryotech Deicing Technology  
Title: RUNWAY DEICER CHEMICALS  
Master Purchase Order No.: 0047A0113

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**The City will reference this Master Purchase Order (MPO) No.: 0047A0113, in all its future correspondence and agency specific purchase orders. All billing and invoices must reference the agency specific number.**

Description of the goods, and services related thereto, being purchased and pricing:

**A.1 ESTIMATED QUANTITIES:**

General Atomics International Services Corp dba Cryotech Deicing Technology (Cryotech) is to order or accept no more than City and County of Denver's actual requirements during the period of this agreement, as determined by actual needs and availability of appropriated funds. It is expressly understood and agreed that Cryotech is to supply the City with its complete actual requirement of the materials specified for the contract period.

**A.2 F.O.B. POINT:**

All prices quoted must be quoted at a firm price F.O.B. Denver, Colorado, delivered to Denver International Airport as unloaded.

**A.3 AIRPORT SECURITY:**

It is a material requirement of this Contract that the Vendor shall comply with all rules, regulations, written policies and authorized directives from the City and/or the Transportation Security Administration with respect to Airport security. The Vendor shall conduct all of its activities at the Airport in compliance with the Airport security program, which is administered by the Security Section of the Airport Operations Division, Department of Aviation. Violation by the Vendor or any of its employees, subcontractors, and vendors of any rule, regulation, or authorized directive from the City or the Transportation Security Administration with respect to Airport Security shall be grounds for immediate termination by the City of this Contract for cause.

The Vendor shall promptly upon notice of award of this Contract, meet with the Airport's Assistant Security Manager to establish badging and vehicle permit requirements for Vendor's operations under this Contract. The Vendor shall obtain the proper access authorizations for all of its employees, subcontractors, and vendors who will enter the Airport to perform work or make deliveries, and shall be responsible for each such person's compliance with all Airport rules and regulations, including without limitation those pertaining to security. Any person who violates such rules may be subject to revocation of his/her access authorization. The failure of the Vendor or any subcontractor to complete any required services hereunder shall not be excused on account of the revocation for good cause of access authorization of any person.

The security status of the Airport is subject to change without notice. If the security status of the Airport changes at any time during the term of this Contract, the Vendor shall take immediate steps to comply with security modifications which occur as a result of the changed status. The Vendor may at any time obtain current information from the Airport Security Office regarding the Airport's security status in relation to the Vendor's operations at the Airport.

The Vendor shall return to the City at the expiration or termination of this Contract, or upon demand by the City, all access keys or access badges issued to it for any area of the Airport, whether or not restricted. If the Vendor fails to do so, the Consultant shall be liable to reimburse the City for all the City's costs for work required to prevent compromise of the Airport security system. The City may withhold funds in the amount of such costs from any amounts due and payable to the Vendor under this Contract.

**A.3.a LAWS, REGULATIONS, TAXES AND PERMITS**

The Vendor shall procure all permits and licenses, pay all charges, taxes and fees and give all notices necessary and incidental to the due and lawful prosecution of the work. All costs thereof shall be deemed to be included in the prices proposed for the work.

The Vendor, at all times, shall observe and comply with all federal, state, county, city and other laws, codes, ordinances, rules and regulations in any manner affecting the conduct of the work.

Without limiting the foregoing, the Vendor shall establish appropriate procedures and controls so that services under this Contract will not be performed by using any alien who is not legally eligible for such employment under United States Immigration laws. Failure to comply with this condition satisfactorily may cause the City to terminate this Contract.

**A.4 COOPERATIVE PURCHASING:**

The City and County of Denver encourages and participates in cooperative purchasing endeavors undertaken by or on behalf of other governmental jurisdictions, pursuant to Denver Revised Municipal Code Sec. 20-64.5. To the extent other governmental jurisdictions are legally able to participate in cooperative purchasing endeavors, the City and County of Denver supports such cooperative activities. Further, it is a specific requirement of this proposal or Request for Proposal that pricing offered herein to the City and County of Denver may be offered by the vendor to any other governmental jurisdiction purchasing the same products.

The vendor(s) must deal directly with any governmental agency concerning the placement of purchase orders, freight charges for destinations outside of the Denver Metro area, contractual disputes, invoicing, and payment. The City and County of Denver shall not be liable for any costs, damages incurred by any other entity.

**A.5 LABORATORY TESTING:**

In the event materials shipped to the City as outlined herein indicate substandard specifications in a qualitative or quantitative manner, the City reserves the right to have a laboratory test made. If material is found to be deficient, the vendor shall be required to pay all costs of testing. If the product is found to meet specifications, the City shall pay all costs.

## A.6 SPECIFICATIONS FOR ITEM NO. 1:

Requirements of the runway deicing fluid are as follows:

- 1) The fluid shall contain minimum 50% potassium acetate by weight plus inhibitors; It shall not contain urea, ethylene, propylene glycol or chlorides.
- 2) The fluid shall have a freezing point of -50°F or lower;
- 3) The fluid shall have 0% Nitrates/Nitrogen;
- 4) The fluid shall have a pH range of 7.0-11.5;
- 5) At the request of DIA personnel vendor must deliver 120,000 gallons to DIA within 12 hours of the start of a snow event and up to 248,000 gallons with 24 hours after a snow event.
- 6) Cryotech shall have Potassium Acetate storage capacity at the site from which the fluid will be shipped to DIA of at least 260,000 gallons and must maintain that level from the period of October 1 through April 30.
- 7) Due to long-term storage, the liquid shall be stable and not separate in storage.

### A.6.a Other provisions of this item include:

The successful proposer shall be responsible for all demurrage charges

**DIA personnel may visit the local storage facility. Cryotech will be required to present the snow removal plan for this facility. In addition, the trucking firm that will be delivering the product to DIA may be inspected and interviewed by DIA personnel. Drivers will need to obtain proper badging upon award (See Section A.3).**

Cryotech shall provide written technical information upon demand:

- the environmental impact
- MSDS,
- handling, storage
- application
- Fluid's certification (see below)
- Further bid deliverables may be identified in the pricing section of this document)

Due to long-term storage, the liquid shall be stable and not separate in storage.

Trace contaminants as reported in AMS 1435 3.1.1.3 shall not exceed EPA or State maximum allowable levels. This includes materials used for corrosion inhibitors.

**Throughout the term of the MPO Cryotech shall provide the City upon demand with the most current Fluid's certification. Said certification shall be from an independent, third party laboratory and shall be dated within 24 months of the date of the request.**

**If during the life of this agreement, the Fluid is to be produced by a subcontractor, documentation of the Fluid certification to the requirements of SAE AMS 1435A shall be required on the Fluid produced at the subcontractor's site in the same manner as required above with said certification being for the Fluid produced at the subcontractor's site of production.**



**Cryotech is to notify THE CITY WITHIN 48 HOURS OF ANY CHANGES IN THE COMPOSITION OF THE PRODUCT BEING DELIVERED. ANY CHANGES TO THE COMPOSITION OF THE PRODUCT MUST BE APPROVED PRIOR TO DELIVER OF UPDATED PRODUCT.**

**PRODUCT INFORMATION (INCLUDING MSDS) IS INCLUDED IN THIS DOCUMENT AS EXHIBIT B.**

PRODUCT DELIVERED—CRYOTECH E36® Runway Deicing Fluid

**DELIVERED PRICE FOR ALL QUANTITIES, UNLIMITED GALLONS: \$4.399**

EXHIBIT "B"

Vendor: GENERAL ATOMICS INTERNATIONAL SERVICES CORP  
dba Cryotech Deicing Technology

Title: RUNWAY DEICER CHEMICALS

**Master Purchase Order No.:** 0047A0113

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THE FOLLOING PAGES COMPRISE EXHIBIT "B"

- 1.) CRYOTECH E36 ® PRODUCT DESCRIPTION AND SPECIFICATIONS
- 2.) CRYOTECH E36 ® MSDS INFORMATION
- 3.) CRYOTECH E36 ® UREA CERTIFICATION
- 4.) CRYOTECH E36 ® AMS 1435 STATEMENT

# CRYOTECH E36<sup>®</sup>

## Liquid Runway Deicer

AMS 1435 Certified



**Cryotech E36<sup>®</sup>** is a potassium acetate-based liquid deicer that is certified for airside use on pavements such as runways, ramps and helipads. E36 has been Cryotech's top seller and the industry standard since 1992. E36 is designed for airports and military installations that require a fast-acting, environmentally friendly, and economical deicer.

### BENEFITS

- Sprays effectively at low temperatures
- Less slippery than glycol-based products
- Remains stable in long term storage
- Comprehensive on-site customer training and/or technical briefings available upon request at no charge

### PERFORMANCE

- Industry leading anti-icing characteristics
- Effective to -25° F (-32° C)

### ENVIRONMENT

- Readily biodegradable Low BOD and COD
- Low toxicity to fish and mammals; Recognized as "relatively harmless" by the U.S. Fish and Wildlife Scale
- Does not contain urea or glycol

### APPLICATION

- Prewetting: Apply at spreader outlet at a rate of 1.25 gallons per 100 lbs (130 g/kg) of solid deicer, such as Cryotech NAAC<sup>®</sup>
- Anti-icing: 0.5 gallons/1000 ft<sup>2</sup> (25 g/m<sup>2</sup>)
- Deicing: 1 gallon/1000 ft<sup>2</sup> (50 g/m<sup>2</sup>) near 32° F (0° C) on thin ice  
3 gallons/1000 ft<sup>2</sup> (150 g/m<sup>2</sup>) below 10° F (-12° C) on 1 inch ice
- Re-apply when new accumulation shows first tendency to bond
- Plow and broom often to reduce fluid dilution

### HANDLING

- E36 should not be stored or plumbed through systems that use galvanized, zinc, or brass components
- Polyethylene or stainless steel containers are preferred, otherwise use carbon or low alloy steel if clean and free of rust, surface deposits, and residues
- Best practices include storing totes and drums in areas protected from weather and exposure to direct sunlight

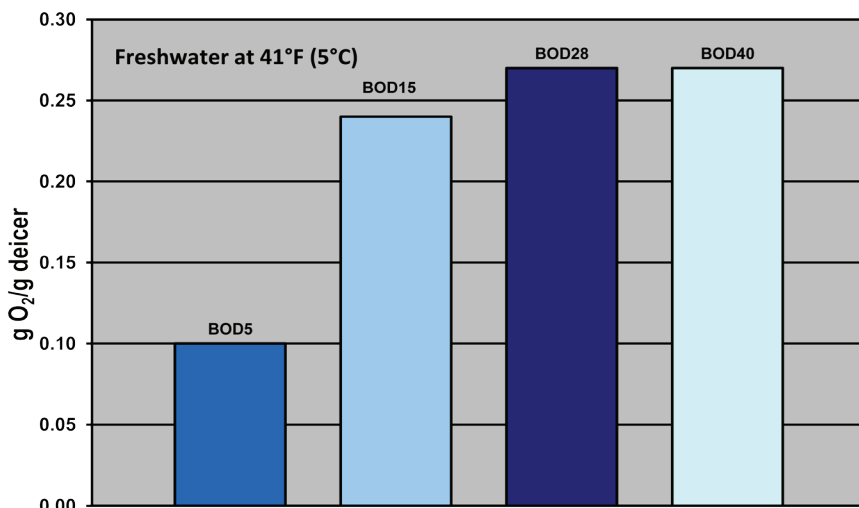
See Reverse Side For Product Specifications  
Test Data Available Upon Request  
ISO 9001:2008 & 14001:2004 CERTIFIED COMPANY



# PRODUCT SPECIFICATIONS - CRYOTECH E36®

<b>COMPOSITION</b>	50% aqueous potassium acetate solution, by weight, plus corrosion inhibitors
<b>APPEARANCE</b>	Clear, blue*, mobile liquid, free from matter in suspension
<b>DENSITY</b>	At 68° F (20° C) = 10.68 lbs/gallon (1.28 g/cm³)
<b>VISCOSITY</b>	At 68° F (20° C) = 6 cP At 32° F (0° C) = 12 cP At -10° F (-23° C) = 49 cP
<b>FLASH POINT</b>	Nonflammable
<b>FREEZING POINT</b>	-76° F (-60° C)
<b>MISCIBILITY WITH WATER</b>	Complete
<b>pH</b>	10.5 to 11.5
<b>SPECIFIC GRAVITY</b>	At 68° F (20° C) = 1.25 - 1.30
<b>PACKAGING</b>	55 gallon drums (208 liters) - 4 drum minimum 265 gallon totes (1003 liters) - 1 tote minimum Bulk - 4400 gallons (16656 liters) minimum * MAY BE COLORLESS AT CUSTOMER REQUEST

## Biological Oxygen Demand for Cryotech E36®



Source: ACRP Project 02-01. Airport Cooperative Research Program, Transportation Research Board. (November 2008)



**TO ORDER OR FOR PRODUCT INFORMATION CONTACT:**

Ph: +1 319.372.6012 or +1 800.346.7237 Fax: +1 319.372.2662

E-mail: [deicers@cryotech.com](mailto:deicers@cryotech.com)



ISO 14001  
EMS 89384



ISO 9001  
FM 39092

**Cryotech Deicing Technology . 6103 Orthoway . Fort Madison, IA . 52627**  
**WWW.CRYOTECH.COM**

Form #MKT600 Rev. 4/20/2012



# CRYOTECH E36<sup>®</sup>

## MATERIAL SAFETY DATA SHEET

### 1. PRODUCT NAME & DESCRIPTION

**CRYOTECH E36<sup>®</sup>** Liquid Runway Deicer  
Complies with Specification AMS 1435

#### MANUFACTURED AND SUPPLIED IN THE USA BY:

Cryotech Deicing Technology  
6103 Orthoway  
Fort Madison, IA 52627  
United States

#### CRYOTECH CONTACT INFORMATION:

Telephone: (800)346-7237  
FAX: (319)372-2662  
email: [deicers@cryotech.com](mailto:deicers@cryotech.com)  
website: <http://www.cryotech.com>

### 2. CHEMICAL COMPOSITION

The percent compositions are given to allow for the various ranges of the components present in the whole product and may not equal 100%.

PERCENT	COMPONENT	CAS#
100%	Cryotech E36 <sup>®</sup> Liquid Runway Deicer	
<b>CONTAINING</b>		
50%	Potassium Acetate	127-08-2
<1.0%	Corrosion Inhibitors in	
50%	Water	7732-18-5

CAS - Chemical Abstract Service Number

### 3. HAZARD IDENTIFICATION

(also see Sections 11 and 12)

#### CAUTION! - MAY CAUSE EYE IRRITATION

##### EYE CONTACT:

This substance is slightly irritating to the eyes and could cause prolonged (days) impairment of your vision. The degree of the injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment. Signs and symptoms may include pain, tears, swelling, redness and blurred vision.

##### SKIN IRRITATION:

This substance is not expected to cause prolonged or significant skin irritation.

##### DERMAL TOXICITY:

The systematic toxicity of this substance has not been determined. However, it should be practically non-toxic to internal organs if it gets on the skin.

##### RESPIRATORY/INHALATION:

This material does not present an inhalation hazard.

##### INGESTION:

If swallowed, this substance is considered practically non-toxic to internal organs. Ingestion may cause irritation of the digestive tract which may result in nausea, vomiting and diarrhea.

This product contains potassium salts. Ingestion of large amounts (25 or more grams) of potassium salts usually causes a person to vomit. If the person is not suffering from a preexisting kidney condition, the absorbed potassium is rapidly excreted in the urine. However, very young children or individuals with compromised kidney and/or cardiac function could experience the following effects after ingesting excessively large doses of potassium salts: irritation and inflammation of the stomach lining, muscular weakness, burning, tingling and numbness sensations of hands and feet, slower heart beat, reduced blood pressure, irregular heart beat and cardiac arrest.

##### OCCUPATIONAL EXPOSURE LIMITS:

None identified

### 4. FIRST AID MEASURES

Chemical Emergency: Spill, leak, fire, or accident call  
Chemtrec day or night (800)424-9300;  
Outside continental USA call (703)527-3887

#### EYE CONTACT:

Flush eyes immediately with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. No additional first aid should be necessary. However, if irritation persists, see a doctor.

#### SKIN CONTACT:

No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

#### INHALATION:

Since this material is not expected to be an immediate inhalation problem, no first aid procedures are required.

#### INGESTION:

If swallowed, give water or milk to drink and telephone for medical advice. DO NOT make the person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital.

### 5. FIRE FIGHTING MEASURES

#### FLASH POINT:

>100°C

#### AUTO IGNITION:

No data available

#### FLAMMABILITY LIMITS (% by volume in air):

Lower: No data available

Upper: No data available

Non-flammable

#### EXTINGUISHING MEDIA:

Use extinguishing media appropriate for surrounding fire.

#### FIRE FIGHTING PROCEDURES:

Fire fighters should wear proper protective equipment, self-contained breathing apparatus with full face piece operated in positive pressure mode.

#### COMBUSTION PRODUCTS:

Normal combustion forms carbon dioxide and water.

#### NFPA RATINGS:

**Health 1; Flammability 0; Reactivity 0; Special NDA:**

(Least - 0, Slight - 1, Moderate - 2, High - 3, Extreme - 4)

These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint Coating Association.

### 6. ACCIDENTAL RELEASE MEASURES

Chemical Emergency: Spill, leak, fire, or accident call  
Chemtrec day or night (800)424-9300;  
Outside continental USA call (703)527-3887

#### SPILL/LEAK PRECAUTIONS:

Contain spillage and absorb on suitable material e.g. sawdust, sand or earth. Transfer to a container for disposal. See section 13.  
Wash the spillage area with plenty of water.

### 7. HANDLING AND STORAGE

#### STORAGE:

Store in clean vessels and containers away from direct heat and strong oxidizing agents. Do not store or handle product with systems constructed of wetted parts that have galvanized steel, zinc or brass components.

#### SPECIAL PRECAUTIONS:

Avoid contact with skin and eyes. Avoid breathing mist when spraying.



# CRYOTECH E36<sup>®</sup>

## MATERIAL SAFETY DATA SHEET

<b>8. EXPOSURE CONTROLS/PERSONAL PROTECTION</b> <b>EYE PROTECTION:</b> Do not get this material in your eyes. Eye contact can be avoided by wearing chemical goggles. <b>SKIN PROTECTION:</b> No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing protective clothing. <b>RESPIRATORY PROTECTION:</b> No special respiratory protection is normally required. <b>VENTILATION:</b> No special ventilation is necessary.	<b>12. ECOLOGICAL INFORMATION</b> COD (TOD): 0.32 g O <sub>2</sub> /g deicer BOD <sub>5</sub> @ 20° C: 0.25 g O <sub>2</sub> /g deicer
<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b> <b>APPEARANCE:</b> Clear, colorless to light straw colored liquid. (Often dyed blue at customer request) <b>pH (20°C):</b> 10.5 - 11.5 <b>BOILING POINT:</b> ~115°C <b>SPECIFIC GRAVITY (20°C):</b> 1.28 <b>EVAPORATION:</b> No data available <b>VAPOR PRESSURE (20°C):</b> 17 mm Hg <b>PERCENT VOLATILE (VOLUME %):</b> No data available <b>VAPOR DENSITY (AIR = 1):</b> No data available <b>VISCOSITY (20°C):</b> 6.5 cP <b>FREEZING POINT:</b> -60°C <b>SOLUBILITY:</b> Completely miscible in water.	<b>13. DISPOSAL CONSIDERATION</b> Based on information available to Cryotech Deicing Technology, this product is neither listed as a hazardous waste nor does it exhibit any of the characteristics that would cause it to be classified or disposed of as an RCRA hazardous waste. If product should spill or be otherwise unsuitable for normal deicing applications, it may be absorbed on suitable materials and disposed of in sanitary landfill unless state or local regulations prohibit such disposal.
<b>10. STABILITY &amp; REACTIVITY</b> <b>HAZARDOUS DECOMPOSITION PRODUCTS:</b> None known. <b>STABILITY:</b> Stable <b>HAZARDOUS POLYMERIZATION:</b> Polymerization will not occur. <b>INCOMPATIBILITY:</b> May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc. Avoid prolonged contact with reactive metals such as magnesium and zinc, especially in closed systems where hydrogen gas may accumulate over time. <b>SPECIAL PRECAUTIONS:</b> READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL. Store away from strong oxidizing materials.	<b>14. TRANSPORT INFORMATION</b> Not restricted under any transport regulations.
<b>11. TOXICOLOGICAL INFORMATION</b> <b>EYE IRRITATION:</b> No product toxicology data available. The hazard evaluation was based on data from similar products. <b>SKIN IRRITATION:</b> No product toxicology data available. The hazard evaluation was based on data from similar products. <b>DERMAL TOXICITY:</b> No product toxicology data available. The hazard evaluation was based on data from similar products. <b>RESPIRATORY/INHALATION:</b> No product toxicology data available. The hazard evaluation was based on data from similar products. <b>INGESTION:</b> The oral LD50 in rats is greater than 5.0 g/kg.	<b>15. REGULATORY INFORMATION</b> <b>ALL OF THE COMPONENTS IN THIS PRODUCT ARE ON THE FOLLOWING INVENTORY LISTS:</b> U.S.A. (TSCA) Europe (EINECS) Canada (DSL/NDSL) <b>TSCA SECTION 12(b):</b> None of the components in this product are regulated under TSCA Section 12(b). <b>OSHA HAZARD CLASSIFICATION:</b> Hazardous Chemical (Irritant); None of the components in this product are considered highly hazardous by OSHA. <b>CERCLA HAZARDOUS SUBSTANCES:</b> There is no CERCLA Reportable Quantity for this material. <b>SARA 311 CATEGORIES:</b> Immediate (Acute) Health Hazard: Yes Delayed (Chronic) Health Hazard: No Fire Hazard: No Sudden Release of Pressure Hazard: No Reactivity Hazard: No <b>SARA 313:</b> None of the components in this product are subject to reporting under SARA Section 313. <b>CLEAN WATER ACT:</b> None of the components in this product are listed as Priority Pollutants under the CWA. None of the components in this product are listed as Toxic Pollutants under the CWA. <b>STATE RIGHT-TO-KNOW:</b> This product does not contain components at levels which are required to be reported under the statutes of the following states: PA, MA, NJ This product does not contain components 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. <b>WHMIS (Canada) CLASSIFICATION:</b> Not controlled
	<b>16. OTHER INFORMATION</b> This Material Safety Data Sheet contains environmental, health and toxicology information for your employees. Please make sure this information is given 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 MSDS must be given to the buyer or the information incorporated in your MSDS. Discard any previous edition of this MSDS.  <b>Latest version of this MSDS can be found at <a href="http://www.cryotech.com">http://www.cryotech.com</a></b>

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, **Cryotech Deicing Technology, a Division of General Atomics International Services Corporation 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.** Cryotech Deicing Technology, a Division of General Atomics International Services Corporation 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.



July 26, 2012

**Cryotech Alternatives to Urea-Based Deicers:**

On May 16, 2012, the United States Environmental Protection Agency (EPA) issued the final rule for Effluent Limitation Guidelines and New Source Performance Standards for the Airport Deicing Category. This rule went into effect June 15, 2012.

For airports that fall within the scope of the guidelines, this rule prohibits the discharge of airfield pavement deicers containing urea. To comply with this ruling, an airport must certify annually that it does not use airfield pavement deicing products containing urea or alternatively, airfield pavement discharges at every discharge point must achieve the numeric limitations for ammonia.

To assist customers in complying with this regulation, Cryotech attests that the following airfield pavement deicing products do not contain urea:

- Cryotech E36<sup>®</sup>
- Cryotech BX36<sup>®</sup>
- Cryotech XT360<sup>®</sup>
- Cryotech NAAC<sup>®</sup>

Product information and Material Safety Data Sheets can be found on the Cryotech website at [www.cryotech.com](http://www.cryotech.com) or by contacting Cryotech at 1-800-346-7237.

Respectfully,

Kimberly Engle  
Senior Chemist



## **CRYOTECH CF7<sup>®</sup>, CRYOTECH E36<sup>®</sup> LAVATORY ANTIFREEZE, AND CRYOTECH E36<sup>®</sup> LIQUID DEICING CHEMICALS**

Cryotech CF7<sup>®</sup> and Cryotech E36<sup>®</sup> Lavatory Antifreeze are materially the same chemistry as Cryotech E36<sup>®</sup> – 50% potassium acetate solution plus a proprietary inhibitor package. CF7 is sold to commercial and government markets for use on roads, bridges, parking garages, sidewalks, etc., E36 Lavatory Antifreeze is sold for use in aircraft lavatory systems, and E36 is sold to airports and military bases for use on runways and ramps.

E36 is certified to AMS 1435 for runway use; CF7 is not. Any test data that references E36 is also applicable to CF7 and E36 Lavatory Antifreeze. However, because they are used for different applications, usage rates, labels, product data, and training information are different for each product. For further information or questions, please contact Cryotech at (800)346-7237 or (319)372-6012.