



**Roanoke Fire-EMS**

Fire Marshal's Office  
 713 Third Street SW  
 Roanoke, VA 24016  
 (540) 853-2795

[www.roanokeva.gov/firemarshal](http://www.roanokeva.gov/firemarshal)

**Fire Prevention Code Permit Application**

2018 FCRY: Cryogenic Fluids

Applicant Information				
Business Name:				
Physical Address:	Street	City	State	Zip
Mailing Address:	Street	City	State	Zip
Contact Name:				
E-mail Address:				
Primary Phone:		Alternate Phone:		
Location of Permitted Activity				
Business Name:				
Physical Address:	Street	City	State	Zip
Permit Billing Information				
Business Name: <small>(including d/b/a or t/a names)</small>				
Billing Address:	Street	City	State	Zip
Billing Contact:			Phone:	
E-mail Address:				
City of Roanoke Business License #:		Federal Tax ID:		

FIRE MARSHAL'S OFFICE USE ONLY		
Reviewed By:		Date:
Comments/Special Conditions:		
Permit Number:	Permit Fee:	

**Application Checklist**

**Review of this permit application requires all of the following to be included:**

- Completed Fire Prevention Code Permit Application
- Site Plan/Floor Plan showing:
  1. Location of Cryogenic Fluids
  2. Location of spill response gear
  3. Location of ALL Fire Extinguishers
  4. Location of ALL Exits or Openings
- SDS for Cryogenic Fluids
- Information on all containers, including size and quantities
- Safety Plan

**Circumstances of Application/Description of Work**

**Permit General Conditions and Acknowledgements**

The Applicant is required to review the following provisions of the Statewide Fire Prevention Code and its referenced standards. After reviewing each provision, the Applicant must initial each item to acknowledge their review and agreement to comply with the requirement. If the requirement is not applicable to the application, the Applicant is to write N/A in place of their initials.

- Maintenance and operational aspects of the storage, use and handling of cryogenic fluids shall comply with this chapter and NFPA 55. Cryogenic fluids classified as hazardous materials shall also comply with the general requirements of Chapter 50. Partially full containers containing residual cryogenic fluids shall be considered as full for the purposes of the controls required.  
Exceptions:
  1. Fluids used as refrigerants in refrigeration systems (see Section 606).
  2. Liquefied natural gas (LNG), which shall comply with NFPA 59A.Oxidizing cryogenic fluids, including oxygen, shall comply with Chapter 63, as applicable. Flammable cryogenic fluids, including hydrogen, methane and carbon monoxide, shall comply with Chapters 23 and 58, as applicable. Inert cryogenic fluids, including argon, helium and nitrogen, shall comply with ANSI/CGA P-18.
- Containers shall be provided with substantial concrete or masonry foundations, or structural steel supports on firm concrete or masonry foundations. Containers shall be supported to prevent the concentration of excessive loads on the supporting portion of the shell. Foundations for horizontal containers shall be constructed to accommodate expansion and contraction of the container. Foundations shall be provided to support the weight of vaporizers or heat exchangers.
- Pressure relief devices shall be provided to protect containers and systems containing cryogenic fluids from rupture in the event of overpressure.
- Pressure relief vent-piping systems shall be constructed and arranged so as to remain functional and direct the flow of gas to a safe location.
- Visible hazard identification signs in accordance with NFPA 704 shall be provided at entrances to buildings or areas in which cryogenic fluids are stored, handled or used.
- Cryogenic containers and systems shall be secured against accidental dislodgement and against access by unauthorized personnel.
- Stationary containers shall be secured to foundations in accordance with the applicable building code. Portable containers subject to shifting or upset shall be secured. Nesting shall be an acceptable means of securing containers. Stationary containers shall be separated from exposure hazards in accordance with the provisions applicable to the type of fluid contained and the minimum separation distances indicated in Table 5504.3.1.1.

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- Cryogenic containers and systems shall be separated from materials and conditions that pose exposure to or from each other.
- Stationary containers shall be separated from exposure hazards in accordance with the provisions applicable to the type of fluid contained and the minimum separation distances. No containers shall be within 10 feet of air intakes, building exits or combustible materials.
- Cryogenic containers and systems in outdoor storage shall be separated from materials and conditions that pose exposure hazards to or from each other in accordance with Sections 5504.3.1.1 through 5504.3.1.1.5.
- Portable containers indoors shall be separated from exposure hazards. No containers shall be within 10 feet of air intakes, building exits or 15 feet from combustible materials.
- Cryogenic fluids in portable containers stored indoors shall only be stored in buildings, rooms or areas constructed for this use in accordance with the applicable building code.

**TABLE 5504.3.1.1**

**SEPARATION OF STATIONARY CONTAINERS FROM EXPOSURE HAZARDS**

EXPOSURE	MINIMUM DISTANCE (feet)
Buildings, regardless of construction type	1
Building exits	10
Wall openings	1
Air intakes	10
Lot lines	5
Places of public assembly	50
Nonambulatory patient areas	50
Combustible materials such as paper, leaves, weeds, dry grass or debris	15
Other hazardous materials	In accordance with Chapter 50

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**Permit Certification**

By my signature below, I hereby certify that I have read and examined this application and that all of the information contained therein is true and correct. Furthermore, I certify that the proposed operations will fully comply with the requirements contained in The Virginia Statewide Fire Prevention Code and any other related laws and /or Codes. I agree to indemnify, save harmless, and defend the City of Roanoke, its agents and employees, from all claims, damages, costs, expenses, and charges, including attorney's fees, which arise out of or by reason of these operations.

I acknowledge that if a permit is issued based on this application, it shall only be valid with in the building, facility, and/or location listed on this application for the specific date(s) and time(s) for which it is issued.

I acknowledge that approval of this application does not constitute permit issuance. Permit issuance does not occur until the completion of an on-site inspection by the Roanoke Fire Marshal's Office.

I acknowledge and understand that any violations of the Virginia Statewide Fire Prevention Code and/or the requirements of this permit may result in immediate permit suspension or revocation.

I agree to indemnify, save harmless, and defend the City of Roanoke, Virginia and its agents and employees from all claims, damages, costs, expenses, and charges, including attorney's fees, which arise out of or by reason of the activities associated with this permit.

<b>Name:</b>			
<b>Signature:</b>		<b>Date:</b>	

## Fire Prevention Code Permit Application Instructions and Conditions 2018 FCRY: Cryogenic Fluids

<b>Permit Name:</b>	2018 FCRY: Cryogenic Fluids															
<b>Statewide Fire Prevention Code Section:</b>	5501.2															
<b>Scope:</b>	<p>Cryogenic fluids. An operational permit is required to produce, store, transport on site, use, handle or dispense cryogenic fluids in excess of the amounts listed below. Exception: Operational permits are not required for vehicles equipped for and using cryogenic fluids as a fuel for propelling the vehicle or for refrigerating the lading.</p> <p style="text-align: center;">PERMIT AMOUNTS FOR CRYOGENIC FLUIDS</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px auto;"> <thead> <tr> <th style="width: 50%;">TYPE OF CRYOGENIC FLUID</th> <th style="width: 25%;">INSIDE BUILDING (gallons)</th> <th style="width: 25%;">OUTSIDE BUILDING (gallons)</th> </tr> </thead> <tbody> <tr> <td>Flammable</td> <td style="text-align: center;">More than 1</td> <td style="text-align: center;">60</td> </tr> <tr> <td>Inert</td> <td style="text-align: center;">60</td> <td style="text-align: center;">500</td> </tr> <tr> <td>Oxidizing (includes oxygen)</td> <td style="text-align: center;">10</td> <td style="text-align: center;">50</td> </tr> <tr> <td>Physical or health hazard not indicated above</td> <td style="text-align: center;">Any amount</td> <td style="text-align: center;">Any amount</td> </tr> </tbody> </table> <p><small>For SI: 1 gallon = 3.785 L.</small></p>	TYPE OF CRYOGENIC FLUID	INSIDE BUILDING (gallons)	OUTSIDE BUILDING (gallons)	Flammable	More than 1	60	Inert	60	500	Oxidizing (includes oxygen)	10	50	Physical or health hazard not indicated above	Any amount	Any amount
TYPE OF CRYOGENIC FLUID	INSIDE BUILDING (gallons)	OUTSIDE BUILDING (gallons)														
Flammable	More than 1	60														
Inert	60	500														
Oxidizing (includes oxygen)	10	50														
Physical or health hazard not indicated above	Any amount	Any amount														
<b>Fee:</b>	\$50.00															
<b>Duration:</b>	Annual															
<b>Application Requirements:</b>	<p>There are specific and specialized requirements described within this application. Please review the application for all requirements.</p> <p>After issuance of your initial permit(s), your permit(s) will be valid for one (1) year.</p>															
<b>Operational Requirements:</b>	Permit holder agrees to abide by the Virginia Statewide Fire Prevention Code and any special stipulations noted on permit. Please review the application for all operational requirements.															
<b>Submittal Instructions:</b>	Submittal must include a completed application and all attachments listed on page 2 of this application. This application will not be reviewed without all required attachments.															