

<b>Title: Gas Cylinders</b>		Copy No: ##
SOP No.: 3.10/3.4/S	Effective Date: September 8, 2011	Location: ###

QSM Approval: \_\_\_\_\_

# Gas Cylinders

## 1. Introduction

High pressure gas cylinders are used daily in the Analysis and Air Quality Section as carrier gas for gas chromatographs, reaction gas and makeup gas for instrumental detectors, concentration of sample extracts as well as for other laboratory procedures. Care and precautions must be exercised when handling and using gas cylinders as described in the following procedure.

## 2. Procedure

### 2.1 Storage

- 2.1.1 Gas cylinders are stored in a locked storage facility.
- 2.1.2 The storage facility can be accessed with the building pass of those with authorization to do so.
- 2.1.3 Each new shipment of gas cylinders must be properly tagged at arrival with the date of receipt, gas ID, laboratory ID and contact name on the tag.
- 2.1.4 Explosive gases and highly toxic gases must be stored in a separate storage facility, which is accessed by the exterior only.

### 2.2 Handling & Use

- 2.2.1 Refer to AAQS Safe Work Procedures; Section A; 9.0; Compressed Gases  
All cylinders must be securely chained, whether during storage, transit or use.
- 2.2.2 Cylinders must be transported with caps on.
- 2.2.3 Whenever a cylinder is replaced the cylinder pressure is recorded on the cylinder tag along with the date.
- 2.2.4 It is the responsibility of the user to ensure that the appropriate labels such as WHMIS and cylinder tags are in place and accurate.
- 2.2.5 In-line hydrocarbon, oxygen and water traps are used where required to remove any gas impurities.
- 2.2.6 Gas cylinders are changed before they are empty (usually when less than 100 psi of gas remains).
- 2.2.7 All regulators for high-pressure cylinders are equipped with an emergency release valve.
- 2.2.8 When in use, gas cylinders are closely monitored to detect any major leaks.

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2.2.9 Whenever gas cylinders or purification traps are changed, the date is recorded in the appropriate injection logbook and on the cylinder tag or trap.

2.2.10 Gas regulator valves are closed when cylinder is not in use.

**2.3 Disposal**

2.3.1 Empty cylinders are capped and then brought to shipping & receiving holding area where they are securely fastened with chains.

2.3.2 Cylinders containing explosive gases or mixed gases must have the copper end fitting replaced onto the cylinder before disposal.

2.3.3 All empty cylinders are tagged as empty and dated and initialled.

2.3.4 The shipping & receiving clerk is responsible for the pickup of empty cylinders by the supplier.

**3. Revisions**

July 1999: Procedure now applicable to all of AAQD; 2.1.3 (add gas ID).

October 2001: New header added

Section 2.3.3: empty cylinders are to be initialled added

November 2005: Section 2.1.2 – Updated according to current procedure in place

May 2011-05-17 Insert Section 2.2.1 to refer to AAQS Safe Work Procedures

July 2011: Lead Reviewer: Sylvain Lemieux

Change Analysis and Air Quality “Division” to “Section”

Change signing approval

June 2013: Lead Reviewer: Jennifer Verner

Review with no changes

**Lead Reviewer:** Jennifer Verner

**Title:** Technologist, Organic Laboratory

**Approved by:** May Siu

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