



**CGA G-1.10—2017**  
**GUIDELINE FOR THE**  
**SAFE OPERATION OF**  
**ACETYLENE GENERATORS**

**FIRST EDITION**

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<b>Contents</b>	<b>Page</b>
1 Introduction.....	1
2 Scope .....	1
3 Definitions.....	1
4 General information of acetylene generation .....	2
5 Description .....	3
6 Hazards.....	4
6.1 Acetylene gas hazards.....	4
6.2 Fill cart lifting device hazards .....	5
6.3 Acetylene gas backflow into water supply systems.....	5
6.4 Elevated temperatures inside the generator.....	5
6.5 Elevated and reduced pressure .....	5
6.6 Improper calcium carbide sizing issue.....	6
6.7 Improper agitation.....	6
6.8 Improper storage and handling of calcium carbide.....	6
6.9 Improper usage of fill cart.....	6
6.10 Improper generator liquid levels .....	6
6.11 Improper water flow .....	7
7 Operation, maintenance, and inspections .....	7
7.1 Operation.....	7
7.2 Maintenance.....	10
7.3 Inspections .....	10
8 Safe practices.....	10
8.1 Acetylene gas buildup in generator feed hoppers.....	10
8.2 Calcium carbide handling during generator feed hopper filling .....	10
8.3 Lockout/tagout.....	11
8.4 Confined space entry.....	11
9 General considerations .....	11
9.1 Personnel safety.....	11
9.2 Calcium carbide quality .....	11
10 Training and procedures .....	11
11 References .....	12
12 Additional reference .....	12
<b>Figures</b>	
Figure 1—Fill cart.....	2
Figure 2—Typical acetylene generator system.....	4

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## 1 Introduction

There have been recent safety concerns involving acetylene decomposition in calcium carbide generators.

## 2 Scope

This publication is intended to provide general guidelines for safe operation of acetylene generators. This publication includes recommendations for operational safe practices, maintenance to mitigate potential acetylene decomposition, and other hazards while operating acetylene generators. This publication is limited to acetylene generation systems using calcium carbide added to water known as wet generation.

## 3 Definitions

For the purpose of this publication, the following definitions apply.

### 3.1 Publication terminology

#### 3.1.1 Shall

Indicates that the procedure is mandatory. It is used wherever the criterion for conformance to specific recommendations allows no deviation.

#### 3.1.2 Should

Indicates that a procedure is recommended.

#### 3.1.3 May

Indicates that the procedure is optional.

#### 3.1.4 Will

Is used only to indicate the future, not a degree of requirement.

#### 3.1.5 Can

Indicates a possibility or ability.

### 3.2 Technical definitions

#### 3.2.1 Backflow prevention device

Double check valve arrangement device used to ensure proper backflow prevention of water/acetylene.

#### 3.2.2 Bridging

When a solid material, such as calcium carbide, gets jammed/compacted and blocks/restricts flow of material.

#### 3.2.3 Calcium carbide island

Unreacted calcium carbide floating on the liquid surface in the generator.

#### 3.2.4 Exothermic

Reaction that produces heat.

#### 3.2.5 Fill cart

Container vessel, typically conical (funnel) shaped, with a bottom valve. This unit is used to transfer calcium carbide from transportation packages to the generator feed hopper. See Figure 1 for an example of a fill cart.

NOTE: Also referred to in the industry as buggy, skip, cart, transfer hopper/cart.