CGA

Compressed Gas Association

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GUIDELINE FOR THE SAFE OPERATION OF ACETYLENE GENERATORS

FIRST EDITION

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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.