

Guidelines for Handling Calcium Carbide in Bulk Cubical Containers



Carbide Industries LLC

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1. Product Labels

Carbide Industries LLC
P.O. Box 3727
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UN 1402
RQ 10 LBS.

CALCIUM CARBIDE

**WARNING! KEEP DRY
USE NO WATER**

FLAMMABLE AND EXPLOSIVE GAS FORMS IF CONTENTS BECOME WET. KEEP OPEN FLAME AND LIGHTS AWAY. DO NOT WELD ON CONTAINER UNLESS IT HAS BEEN PURGED AND CHECKED FOR GAS.

MAY CAUSE EYE AND SKIN IRRITATION. IN CASE OF CONTACT WITH EYES IMMEDIATELY FLUSH WITH WATER FOR AT LEAST 15 MINUTES. CALL A PHYSICIAN. FOR CONTACT WITH SKIN, FLUSH WITH WATER.

IN CASE OF FIRE: DO NOT USE WATER TO EXTINGUISH!
USE ABC, DRY POWDER EXTINGUISHERS, DRY SAND.

IN CASE OF SPILL: DO NOT USE WATER. COLLECT IN CLEAN DRY CONTAINERS. STORE IN WELL VENTILATED AREA. OBSERVE GOVERNMENT REGULATIONS.

IN CASE OF EMERGENCY: CALL CARBIDE INDUSTRIES 1-502-775-4123
CALL CHEMTREC 1-800-424-9300

FOR ADDITIONAL SAFETY INFORMATION, SEE CURRENT CARBIDE INDUSTRIES MATERIAL SAFETY DATA SHEET.

2. Receiving Inspection

All calcium carbide containers in each shipment must be visually inspected upon receipt.

1. Top covers must be tightly closed with shipping seals intact.
2. The body of the containers must be examined for hot spots, bulges, open seams or evidence of in-transit damage which might affect water tightness.
3. Bottom container discharges having slide gates must be closed with camlocks in locked position. Bottom container discharges having butterfly valves must be closed and secured with shipping seals or bolts.
4. The two (2) purge pipes must be tightly closed with pipe caps or plugs.

Any container failing to meet these conditions must be isolated, allowed to cool (if hot), and removed to a dry and remote area, away

from all sources of ignition. The container should be covered to prevent water entry.

Area must be posted:

CALCIUM CARBIDE

Warning - Keep Dry

Flammable and Explosive Gas Forms If Contents Become Wet

No Smoking or Open Flames

Do Not Use Water To Extinguish Flames

All applicable federal, state and local ordinances governing storage of calcium carbide must be observed.

Notify Carbide Industries, Distribution Dept., Plant Manager or Sales Representative. Specific handling instructions will be given.

Any in-transit damage should be noted on carrier's receipt.

3. Storing and In-Plant Handling of Calcium Carbide Containers

1. Calcium carbide containers which pass receiving inspection must be stored in a well drained storage area, which has a firm surface and is void of any ground water. Covered outdoor storage is preferred to minimize accumulation of snow and water on the flat container top.
2. All storage areas, including any roof areas, must be well ventilated.
3. Warning signs must be posted throughout the storage area.
4. Outer surfaces of containers must be free of ice, snow and moisture before being brought to the calcium carbide discharging stations. Use spreader bar when lifting container with overhead crane.

Storage area must be posted:

CALCIUM CARBIDE

Warning - Keep Dry

**Flammable and
Explosive Gas Forms If
Contents Become Wet**

**No Smoking or
Open Flames**

**Do Not Use Water To
Extinguish Flames**

All applicable federal, state and local ordinances governing storage of calcium carbide must be observed.

4. Purging Containers with Dry Nitrogen

1. Immediate area must be dry and well ventilated to avoid accumulation of acetylene and nitrogen. Post signs prohibiting smoking and use of open flame. Signs shall be as shown on page one.
2. Attach aluminum grounding cable to container.
3. Remove cap from vertical purge outlet pipe and connect $\frac{3}{4}$ inch purge exhaust hose. Vent exhaust outside building away from ignition sources. (See schematic)

Caution: This step (3) must be done prior to step (4). Excessive nitrogen pressure will distort container.

4. Remove cap from horizontal purge inlet pipe and connect dry $\frac{1}{2}$ inch nitrogen hose with regulator, flowmeter, check valve and 5 PSIG relief valve. (See schematic)
5. Set regulator at 3 PSIG, maximum, and purge container with at least 60 SCF nitrogen. (See schematic)
6. Test exhaust gas for acetylene using properly calibrated equipment suitable for detecting acetylene in nitrogen. If acetylene concentration is more than 0.6% (25% L.E.L.) restart nitrogen flow and repeat procedure 5. Remove tubing and close port valve.
7. When container is to be used and is already positioned on the support stand or on a properly gasketed dispensing unit, proceed to "Discharging Calcium Carbide from Container."
8. When acetylene concentration is less than 0.6%, (25% L.E.L.) the nitrogen flow rate can be reduced until the container is needed for production.

5. Discharging Calcium Carbide from Containers

1. Set containers on unloading stand or on properly gasketed dispensing unit.
2. Attach aluminum grounding cable to container.
3. Remove cap from vertical purge outlet pipe and connect $\frac{3}{4}$ inch purge exhaust hose. Vent exhaust outside building away from ignition sources. (See schematic)

Caution: This step (3) must be done prior to step 4. Excessive nitrogen pressure will distort container.

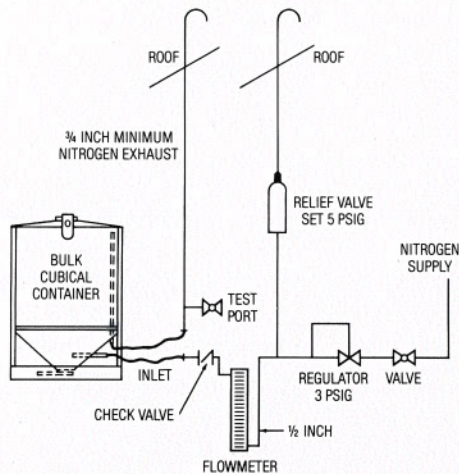
4. Remove cap from horizontal purge inlet pipe and connect dry $\frac{1}{2}$ inch nitrogen hose with regulator, flowmeter, check valve and 5 PSIG relief valve. (See schematic)
5. Set regulator at 3 PSIG, maximum and purge container with at least 60 SCF nitrogen. (See schematic)
6. Release cam-locks on containers and move bottom slide gate or butterfly valve to the OPEN position. Flow of calcium carbide should be controlled only by dispenser unit apparatus, as bottom gates are not designed for regulating rate of discharge.
7. Avoid spilling calcium carbide in work area. All spilled calcium carbide must be cleaned up and used immediately or removed to an outdoor posted isolated area, away from buildings, open flames or other sources or ignition. Do not allow carbide to accumulate in piles. In the event of significant spills contact your supplier.

In the event of spills of 10 pounds or more of calcium carbide, report the incident to the National Response Center at 1-800-424-8802.

6. Handling Empty Containers

1. When container is considered empty, tap the sides with a rubber/wood mallet to make sure all carbide has been removed.
2. Inspect gaskets at the slide gate or butterfly valve. Replace worn or missing gaskets. Close the bottom butterfly valve or slide gate securely and lock cam-locks.
3. Test purge exhaust for acetylene. Purging can be discontinued when acetylene concentration is below 0.6% (25% L.E.L.)
4. Turn off nitrogen flow, disconnect purge and exhaust pipe hoses. Cap container purge and exhaust pipes and disconnect grounding cable.
5. Remove container from dispensing unit.
6. Top cover must be tightly closed.
7. Transport empty container to storage area.

Carbide Industries assumes no liability in connection with handling, storing, discharging or any other use of any container, or application of the procedures as set forth herein.



TYPICAL NITROGEN PURGE SCHEMATIC

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