Right to Know Hazardous Substance Fact Sheet

Emergency Responders Quick Reference

Common Name: **CALCIUM CARBIDE**

Synonyms: Acetylenogen; Calcium Acetylide
CAS No: 75-20-7
Molecular Formula: CaC_2
RTK Substance No: 0312
Description: Grayish-black lump or crystalline powder with a garlic-like odor

HAZARD DATA

Hazard Rating	Firefighting	Reactivity
3 - Health **3 - Fire** **2 ~~W~~ - Reactivity** **DOT#:** UN 1402 **ERG Guide #:** 138 **Hazard Class:** 4.3 (Water Reactive/ Dangerous When Wet)	FLAMMABLE AND WATER REACTIVE When **Calcium Carbide** is exposed to WATER or MOISTURE it forms flammable *Acetylene gas*. Use approved Class D extinguishers or smother with dry sand, dry clay or dry ground limestone. DO NOT USE WATER, CO_2 or FOAM as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE, including *Calcium Oxides*. CONTAINERS MAY EXPLODE IN FIRE. Use water spray only to keep fire-exposed containers cool.	**Calcium Carbide** reacts with WATER and MOISTURE to produce flammable *Acetylene gas* and *Lime*. The heat of the reaction may ignite the *Acetylene*. **Calcium Carbide** reacts with COPPER, SILVER, MERCURY and BRASS to form explosive compounds such as METAL ACETYLIDES. **Calcium Carbide** is not compatible with METHANOL; OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); STRONG ACIDS (such as HYDROCHLORIC, SULFURIC and NITRIC); ACID FUMES; STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); and METAL SALTS and METAL OXIDES (such as IRON CHLORIDE and IRON OXIDE).

SPILL/LEAKS

Isolation Distance:

Spill: 25 meters (75 feet)

Fire: 800 meters (1/2 mile)

Cover with dry lime, sand or soda ash and place into sealed containers for disposal.

Use only non-sparking tools and equipment, especially when opening and closing containers of **Calcium Carbide**.

DO NOT USE WATER OR WET METHOD.

Keep **Calcium Carbide** out of confined spaces, such as sewers, because of the possibility of an explosion.

DO NOT wash into sewer.

Calcium Carbide is harmful to aquatic life at low concentrations.

PHYSICAL PROPERTIES

Odor Threshold:	Garlic-like odor
Flash Point:	Flammable solid
LEL:	2.5% (for *Acetylene gas*)
UEL:	82% (for Acetylene gas)
Auto Ignition Temp:	617ºF (325ºC)
Specific Gravity:	2.22 (water = 1)
Water Solubility:	Reacts
Melting Point:	4,172ºF (2,300ºC)
Molecular Weight:	64.1

EXPOSURE LIMITS

No occupational exposure limits have been established for **Calcium Carbide**.

The Protective Action Criteria values are: PAC-1 = 120 mg/m^3 PAC-2 = 1,300 mg/m^3 PAC-3 = 7,900 mg/m^3

PROTECTIVE EQUIPMENT

Gloves:	Nitrile and Natural Rubber
Coveralls:	DuPont Tyvek®
Respirator:	>30 mg/m^3 - SCBA Use SCBA at any level if *Acetylene gas* may be present

HEALTH EFFECTS

Eyes:	Irritation and burns
Skin:	Irritation, rash and burning feeling
Inhalation:	Mouth, nose, throat and lung irritation with coughing and severe shortness of breath (pulmonary edema)

FIRST AID AND DECONTAMINATION

Remove the person from exposure.

Flush eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn. Seek medical attention.

Quickly remove contaminated clothing and wash contaminated skin with large amounts of water.

Begin artificial respiration if breathing has stopped and CPR if necessary.

Transfer promptly to a medical facility. Medical observation is recommended as symptoms may be delayed.