CAMEO Chemicals

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Chemical Datasheet

AQUA REGIA

Chemical Identifiers

UN/NA Number	CAS Number	CHRIS Code	DOT Hazard Label
• 1798	• 8007-56-5	none	• CORROSIVE

NFPA 704: data unavailable

General Description

A yellow liquid with a pungent odor prepared by mixing nitric acid and hydrochloric acid, usually in a ratio of one part of nitric acid to three or four parts of hydrochloric acid. Fumes are irritating to the eyes and mucous membranes. Corrosive to metals and to tissue. Density 14.7 lb /gal.

Hazards

Reactivity Alerts

- Strong Oxidizing Agent
- Air-Reactive

Air & Water Reactions

Fumes in air. Soluble in water with release of heat.

Fire Hazard

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Vapors may accumulate in confined areas (basement, tanks,

hopper/tank cars etc.). Substance will react with water (some violently), releasing corrosive and/or toxic gases and runoff. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated or if contaminated with water. (ERG, 2008)

Health Hazard

TOXIC; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death. Reaction with water or moist air will release toxic, corrosive or flammable gases. Reaction with water may generate much heat that will increase the concentration of fumes in the air. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2008)

Reactivity Profile

AQUA REGIA is a powerful oxidizing agent and a strong acid. Reacts exothermically with chemical bases (for example: amines and inorganic hydroxides) to form salts and water. Reacts with most metals, including gold and platinum, to dissolve them with generation of toxic and/or flammable gases. Can initiate polymerization in polymerizable organic compounds. Reacts with cyanide salts to generate toxic hydrogen cyanide gas. Generates flammable and/or toxic gases with dithiocarbamates, isocyanates, mercaptans, nitrides, nitriles, sulfides, and weak or strong reducing agents. Additional exothermic gas-generating reactions occur with sulfites, nitrites, thiosulfates (to give H2S and SO3), dithionites (SO2), and carbonates (CO2).

Belongs to the Following Reactive Group(s)

- Acids, Inorganic Oxidizing

Response Recommendations

Firefighting

Extinguish fire using agent suitable for type of surrounding fire. (Material itself does not burn or burns with difficulty.) Use water in flooding quantities as fog. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible. (AAR, 2003)

Non-Fire Response

Keep material out of water sources and sewers. Build dikes to contain flow as necessary. Use water spray to knock-down vapors. Neutralize spilled material with crushed limestone, soda ash, or lime. Vapor knockdown water is corrosive or toxic and should be diked for containment. Land spill: Dig a pit, pond, lagoon, holding area to contain liquid or solid material. Dike surface flow

using soil, sand bags, foamed polyurethane, or foamed concrete. Absorb bulk liquid with fly ash or cement powder. Neutralize with agricultural lime (CaO), crushed limestone (CaCO3) or sodium bicarbonate (NaHCO3). Water spill: Neutralize with agricultural lime (CaO), crushed limestone (CaCO3), or sodium bicarbonate (NaHCO3). (AAR, 2003)

Protective Clothing

Avoid breathing vapors. Keep upwind. Avoid bodily contact with the material. Wear appropriate chemical protective gloves, boots and goggles. Do not handle broken packages unless wearing appropriate personal protective equipment. Wash away any material which may have contacted the body with copious amounts of water or soap and water. Wear positive pressure self-contained breathing apparatus when fighting fires involving this material. If contact with the material anticipated, wear appropriate chemical protective clothing. (AAR, 2003)

First Aid

Move victim to fresh air. Call 911 or emergency medical service. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult. Remove and isolate contaminated clothing and shoes. In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes. For minor skin contact, avoid spreading material on unaffected skin. Keep victim warm and quiet. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. (ERG, 2008)

Physical Properties

Molecular Formula: Cl-H.H-N-O3

Flash Point: data unavailable

Lower Explosive Limit: data unavailable

Upper Explosive Limit: data unavailable

Autoignition Temperature: data unavailable

Melting Point: data unavailable

Vapor Pressure: data unavailable

Vapor Density: data unavailable

Specific Gravity: 1.76 (AAR, 2003)

Boiling Point: data unavailable

Molecular Weight: data unavailable

Water Solubility: data unavailable

AEGL: data unavailable

ERPG: data unavailable

TEEL-1	TEEL-2	TEEL-3
1.6 ppm (SCAPA, 2008)	18.0 ppm	94.5 ppm

IDLH: data unavailable

Regulatory Information

Regulatory Names: none

CAA RMP: Not a regulated chemical.

CERCLA: Not a regulated chemical.

EHS (EPCRA 302): Not a regulated chemical.

TRI (EPCRA 313): Not a regulated chemical.

RCRA Chemical Code: none

Alternate Chemical Names

- ACIDE CHLORHYDRIQUE ET ACIDE NITRIQUE EN MÉLANGE (DOT FRENCH)
- ACIDE NITRIQUE ET ACIDE CHLORHYDRIQUE EN MÉLANGE (DOT FRENCH)
- ACIDE NITROCHLORHYDRIQUE (DOT FRENCH)
- ACIDO NITROCLORHÍDRICO (DOT SPANISH)
- AGUA REGIA (DOT SPANISH)
- CHLOROAZOTIC ACID
- CHLORONITROUS ACID
- EAU RÉGALE (DOT FRENCH)
- MET-ETCH
- NITROHYDROCHLORIC ACID
- NITROMURIATIC ACID