EREZTECH LLC
11555 Medlock Bridge Road, Suite 100, Johns Creek, GA 30097, USA
T: +1.888.658.1221 F: 1.678.619.2020
E: info@ereztech.com W: http://ereztech.com

SAFETY DATA SHEET

Section 1. Identification

Product Name: Dicobalt hexacarbonyl tert-butylacetylene

Product Type: Liquid

CAS Number: 56792-69-9

Product Number: CO2699

Product Manufacturer: Ereztech LLC
11555 Medlock Bridge Road, Suite 100
Johns Creek, GA 30097

Product Information: (888) 658-1221

In case of an emergency: (888) 658-1221 (for spill, leak, fire or exposure)
*** Contact manufacturer for all non-emergency calls.

Section 2. Hazards Identification

Emergency Overview

Appearance/Odor: Dark red/brown liquid, odor not determined.

Classification:
FLAMMABLE LIQUIDS; - Category 4, H227
ACUTE TOXICITY, ORAL; - Category 4, H302
ACUTE TOXICITY, DERMAL; - Category 4, H312
SKIN CORROSION/IRRITATION; - Category 2, H315
SENSITIZATION, SKIN; - Category 1, H317
SERIOUS EYE DAMAGE/IRRITATION; - Category 2A, H319
ACUTE TOXICITY, INHALATION; - Category 4, H332
SENSITISATION, RESPIRATORY; - Category 1, H334
CARCINOGENICITY; - Category 2, H351
REPRODUCTIVE TOXICITY; - Category 2, H361
HAZARDOUS TO THE AQUATIC ENVIRONMENT, CHRONIC TOXICITY; - Category 3, H412

GHS label elements

Signal word: DANGER

Hazard statements:
H227: Combustible liquid.
H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.

Section 2. Hazards Identification

Hazard statements (cont.):

H332: Harmful if inhaled.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H351: Suspected of causing cancer.
H361: Suspected of damaging fertility or the unborn child.
H412: Harmful to aquatic life with long lasting effects.

Hazard pictograms:

Precautionary statements

Prevention:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261: Avoid breathing dust/fumes/gas/mist/vapors/spray.
P264: Wash exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281: Use personal protective equipment as required.
P285: In case of inadequate ventilation, wear respiratory protection.

Response:

P301 + P312: IF SWALLOWED; Call a POISON CENTER or doctor/physician if you feel unwell.
P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313: IF exposed or concerned: Get medical advice/attention.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.

Section 2. Hazards Identification

Response (cont.):
P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362: Take off contaminated clothes and wash before reuse.
P370 + P378: In case of a fire: Use sand, dry chemical, water spray, alcohol resistant foam or carbon dioxide for extinction.

Storage:
P403 + P235: Store in a well ventilated place. Keep cool.
P405: Store locked up.

Disposal:
P501: Dispose of contents/ container to an approved wasted disposal plant.

General:
None.

OSHA/HCS status:
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Hazards not otherwise classified:
None known.

Section 3. Composition/Information on Ingredients

Substance/mixture : Substance
Synonyms : (3,3-Dimethyl-1-butyne)dicobalt hexacarbonyl; CCTBA
Formula : $C_{12}H_{10}Co_2O_6$
Molecular weight : 368.07
CAS-No. : 56792-69-9

Ingredient Name	%	CAS Number
Dicobalt hexacarbonyl tert-butylacetylene	>98	56792-69-9

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First Aid Measures

Description of Necessary First Aid Measures

General Advice: Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue rinsing.

Skin Contact: Wash off contaminated skin with soap and plenty of water. Get medical attention if irritation develops and persists.

Section 4. First Aid Measures

Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Call a POISON CENTER or doctor/physician.

Ingestion: Call a physician or POISON CONTROL CENTER immediately. Rinse mouth. Do NOT induce vomiting. Remove dentures if any. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most Important Symptoms/Effects, Acute and Delayed Potential Acute Health Effects

General: Suspected of causing cancer. Suspected of damaging fertility or the unborn child.

Eye Contact: Causes serious eye irritation. Symptoms may include stinging, tearing, and redness.

Inhalation: Serious effects on the lungs may include asthma, allergy symptoms, pneumonia, wheezing and difficult breathing. Inhalation may cause an irritation of the respiratory organs of sensitive persons resulting in obstruction of airways.

Skin Contact: Harmful in contact with skin. Causes skin irritation. Repeated exposure may cause allergic dermatitis.

Ingestion: Harmful if swallowed. Diarrhea and vomiting may occur. Ingestion of significant amounts of cobalt containing compounds has been reported to have potential for causing blood, heart, thyroid and pancreatic damage.

Indication of Immediate Medical Attention and Special Treatment Needed, If Necessary

Notes to Physician: Treat symptomatically.

Specific Treatments: No specific treatment.

Protection of First Responders: No action taken shall be taken involving any personal risk without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire Fighting Measures

General Hazards: No data available.

Suitable Extinguishing Media: Use water spray, water fog, sand, dry chemical or carbon dioxide (CO_2).

Section 5. Fire Fighting Measures

Unsuitable Extinguishing Media: None known.

Unusual Fire and Explosion Hazard: No data available.

Product of Combustion: Decomposition products include carbon oxides (CO_X) and cobalt oxides. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Protection of Firefighters: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Use water spray or fog to cool exposed containers.

Avoid all eye and skin contact and do not breathe vapors or mists. Fire-fighters should wear appropriate protection equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in a positive pressure mode.

Section 6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

For Non-emergency Personnel: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid inhalation of aerosols, vapors or mists. Provide adequate ventilation. Wear respiratory protection. Put on appropriate personal protective equipment.

For Emergency Responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

Environmental Precautions: Do not allow dispersal of spilled material and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for Containment

Small/Large Spill: Remove all sources of ignition. Use only non-sparking tools.

Section 6. Accidental Release Measures

Methods for Containment

Small/Large Spill (cont.): Contain and collect spillage with non-combustible, dry absorbent material (e.g. sand, earth, vermiculite or diatomaceous earth) and place in dry container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and Storage

Precautions: Handle under a dry, inert gas. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Do not handle until all safety precautions have been read and understood. Obtain special instructions before using. Keep container tightly sealed. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapors or mist. Do not ingest. Avoid prolonged exposure. Provide adequate ventilation.

Protective Measures: Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapors or mists. Keep in the original container kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

General Occupational Hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking or smoking. Remove contaminated clothing and protective equipment before entering eating areas. Contaminated clothing should not be allowed to leave the workplace and should be washed before reuse. See also Section 8 for additional information on hygiene measures.

Safe Storage Conditions: Store under a dry, inert gas. Nitrogen with less than 5 ppm each of moisture and oxygen is recommended. Keep away from heat, sparks and open flames. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (oxidizing agents) and food and drink. Keep container tightly closed and sealed until ready for use. Store locked up.

Section 8. Exposure Controls/Personal Protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and conduct regular repairs. Waste from these procedures should be handled in accordance with Section 13.

Occupational Exposure Limits:

List	Components	CAS-No.	Type	Value
ACGIH	Cobalt	7440-48-4	TLV	0.02 mg/m^3 (Co metal)
OSHA		7440-48-4	PEL	0.1 mg/m^3 (Co metal)

Engineering Controls: Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute. Provide an eyewash/shower station.

Environmental Exposure Controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual Protection Measures

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Remove all soiled and contaminated clothing immediately. Contaminated clothing should not be allowed to leave the workplace and should be washed before reuse. Do not inhale gases/fumes/vapors. Avoid contact with eyes and skin. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/Face Protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles, faceshield (8-inch minimum). Refer to 29 CFR 1910.133, ANSI Z87.1, or European Standard EN166.

Section 8. Exposure Controls/Personal Protection

Skin Protection

Hand Protection:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: Chemical-resistant gloves. Gloves must be inspected prior to use.

Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Neoprene or nitrile rubber.

Other Skin Protection:

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Section 9. Physical and Chemical Properties

Physical State: Liquid.

Color: Dark red.

Odor: No data available.

Odor Threshold: No data available.

pH: No data available.

Section 9. Physical and Chemical Properties

Melting Point:	No data available.
Boiling Point:	52 °C (125.6 °F) @ 0.83 mm Hg.
Flash Point:	84 °C (183.2 °F).
Auto-ignition temperature:	No data available.
Specific Gravity:	1.254 g/ml @ 20 °C (68 °F).
Vapor Pressure:	0.1 mmHg @ 40 °C (104 °F).
Vapor Density:	No data available.
Water Solubility:	Insoluble.
Evaporation Rate:	No data available.
Viscosity:	18.9 cPs @ 20 °C (68 °F).
VOC Content:	No data available.

VOCs are calculated following the requirements under 40 CFR, Part 59, Subpart C for Consumer Products and Subpart D for Architectural Coatings.

Section 10. Stability and Reactivity

Reactivity:	No additional information available.
Chemical Stability:	Stable at normal ambient temperature and pressure and under recommended storage conditions.
Conditions to Avoid:	Heat/sparks/open flames.
Incompatible Materials:	Oxidizing agents, halogens.
Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products formed under fire conditions: irritating fumes, organic acid vapors, carbon oxides and cobalt oxides. In the event of a fire: see section 5.
Possibility of Hazardous Reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.

Section 11. Toxicological Information

Information on Toxicological Effects

Acute Toxicity	:	No specific data available.
Irritation/Corrosion	:	Causes skin irritation. Causes serious eye irritation.
Sensitization	:	May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ Cell Mutagenicity	:	No specific data available.

Section 11. Toxicological Information

Carcinogenity

IARC	:	Cobalt; CAS 7440-48-4. Group 2B: possibly carcinogenic to humans.
ACGIH	:	Cobalt; CAS 7440-48-4. Group A3: confirmed animal carcinogen with unknown relevance to humans
NTP	:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by NTP.
OSHA	:	No component of this product present at levels greater than 0.1% is identified as probable, possible or confirmed human carcinogen by OSHA.
Reproductive Toxicity	:	Suspected of damaging fertility or the unborn child.
Teratogenicity	:	No specific data available.
Specific Target Organ Toxicity (single exposure)	:	Respiratory tract irritation.
Specific Target Organ Toxicity (repeated exposure)	:	Chronic exposure to cobalt compounds may result in permanent lung damage.
Aspiration Hazard	:	No specific data available.
Information on the likely routes of exposure	:	Inhalation, dermal, oral.
Additional Information	:	None

Section 12. Ecological Information

Numerical Measures of Toxicity

Toxicity to Fish	:	No specific data available.
Toxicity to daphnia and other aquatic invertebrates	:	No specific data available.
Toxicity to algae	:	No specific data available.
Persistence and Degradability		
Biodegradability	:	No specific data available.
Bioaccumulative potential	:	No specific data available.
Mobility in soil	:	No specific data available.
Other Adverse Effects	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13. Disposal Considerations

Waste Treatment Methods

Product Dispose of in accordance with local, state, and federal regulations. Refer to 40 CFR 260-299 for complete waste disposal regulations. Consult your local, state, or federal agency before disposing of any chemicals.

Contaminated packaging Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Section 14. Transport Information

	DOT	IMDG	IATA
UN Number	NA1993	Not regulated.	Not regulated.
UN Proper Shipping Name	Combustible liquid, n.o.s. (Dicobalt hexacarbonyl tert-butylacetylene)	-	-
Transport Hazard Classes	3	-	-
Packing Group	III	-	-
Environmental Hazards	Yes	Yes	Yes
Additional Information			

Additional Information : This product is Combustible as defined by the US Department of Transportation (DOT). It is regulated for transport in the United States in containers > 119 gallons (450 liters). The product is not regulated for transport by the IATA, ADR/RID, ADNR or the IMDG regulations.

DOT Quantity Limitation Passenger aircraft/rail: 15.8 gal. (60L) (49 CFR 173.27)

DOT Quantity Limitation Cargo aircraft only: 58 gal. (220L) (49 CFR 175.75)

Special Precautions for User : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transporting in Bulk According to Annex II of MARPOL 73/78 and the IBC Code : Not applicable.

Section 15. Regulatory Information

TSCA (Toxic Substance Control Act):
This product is not listed on the U.S. Toxic Substances Control Act Chemical Inventory (TSCA Inventory). Use of this product is restricted to research and development only. This product must be used under the supervision of a technically qualified individual as defined by the TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
Flammable Liquid, Acute Toxicity (Oral, Dermal, Inhalation), Skin Corrosion or Irritation, Serious Eye Damage or Irritation, Respiratory or Skin Sensitization, Carcinogenicity.

Massachusetts Right to Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	

Pennsylvania Right to Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	

New Jersey Right to Know Components

	CAS-No.	Revision Date
Cobalt	7440-48-4	8/2/2010

California Proposition 65 Components
This product contains a chemical known to State of California to cause cancer.

	CAS-No.	Revision Date
Cobalt	7440-48-4	11/20/2015

Section 16. Other Information

National Fire Protection Association (U.S.A.)

Section 16. Other Information

HMIS Rating

HEALTH	**3**
FLAMMABILITY	**2**
PHYSICAL HAZARD	**0**

History

Date of printing	:	7/10/19
Date of issue/Date of Revision	:	7/10/19
Date of previous issue	:	None.
References	:	None.

Abbreviations and Acronyms

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DOT: US Department of Transportation
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
HMIS: Hazardous Materials Identification System
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
IMDG: International Maritime Code for Dangerous Goods
NFPA: National Fire Protection Association
NIOSH: National Institute of Occupational Safety and Health
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
SARA: Superfund Amendments and Reauthorization Act
VOC: Volatile Organic Compound

Section 16. Other Information

Disclaimer

The information herein is believed to be accurate and is presented in good faith; however, no warranties or representations are made by Ereztech LLC regarding the accuracy or completeness of the information. Ereztech LLC shall not be liable for any damages resulting from the handling, or from the contact with the above product.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.