

**Material Safety Data Sheet**

**PRODUCT: CAO-5**

**Section 1 - COMPANY AND MATERIAL IDENTIFICATION**

Supplier: PMC Specialties Group, Inc.  
 Address: 26032 Detroit Road Suite #1  
 Westlake, OH 44145  
 Emergency Phone: (800) 228-3673  
 (800) 227-2442  
 Chemical Name: 2,2' Methylene-Bis-(4 Methyl-6-tert-butylphenol)  
 Synonyms: N/A  
 Trade Name: CAO-5  
 CAS Registry Number: 119-47-1  
 EINECS Number : NA  
 Chemical Family: Substituted Hydroxytoluene

Formula:  $C_{28}H_{32}O_2$   
 EEC Number : NA

**Precautionary Labeling**

**NFPA/Hazardous Materials Identification System**



**Health Hazard**

- 4 - Deadly
- 3 - Extreme Danger
- 2 - Hazardous
- 1 - Slight Hazard
- 0 - Normal Material

**Specific Hazard**

- OXY - Oxidizer
- ACID - Acid
- ALK - Alkali
- CORR - Corrosive
- W - Water Reactive
- RAD - Radioactive

**Fire Hazard (Flash Pts)**

- 4 - Below 73 °F
- 3 - Below 100 °F
- 2 - Below 200 °F
- 1 - Above 200 °F
- 0 - Will Not Burn

**Reactivity**

- 4 - Reactivity
- 3 - Shock & Heat May Detonate
- 2 - Violent Chemical Change
- 1 - Unstable If Heated
- 0 - Stable

**HMIS Personal Protection Index Code:**

HMIS Health : 1  
 HMIS Reactivity : 1  
 HMIS Flammability : 1

**HMIS Hazardous Ratings**

- 0 - Minimal Hazard
- 1 - Slight Hazard
- 2 - Moderate Hazard
- 3 - Serious Hazard
- 4 - Severe Hazard

**Personal Protection: Chemical Safety Glasses, Gloves, Vapor Respirator**

**Precautionary Label Statements: N/A**

Issue Date: February 8, 2002

Revised Date: September 28, 2000

N/A : Not Applicable or Not Available

Section 2 - COMPOSITION HAZARDOUS INGREDIENTS

Component	%	CAS Number	ACGIH	OSHA
2,2' Methylene-bis-(4-methyl-6-tert-butylphenol)	>99%	119-47-1	N/A	N/A

Section 3 - PHYSICAL DATA

Boiling Point @ 760 mm Hg: N/A  
 Vapor Pressure @ 20 °F: N/A  
 Vapor Density (Air = 1): 7.6  
 Solubility in Water: Insoluble  
 Melting Point: N/A  
 Appearance: Off-white crystals

Specific Gravity (H2O = 1): 1.08  
 % Volatiles by Volume: N/A  
 Evaporation Rate (Ether = 1) : N/A  
 Freezing Point : 127 - 131 °C  
 Bulk Density @ 20 °F : N/A  
 Odor: Slight

Section 4 - FIRE AND EXPLOSION HAZARD DATA

Flash Point ( Closed Cup ): > 200 °F  
 Flammable Limits: LEL: N/A  
 UEL: N/A  
 Auto-ignition Temperature: N/A

Extinguishing Media: Foam, Carbon Dioxide, Dry Chemical, Water

Special Fire Fighting Procedures: Fire fighters should wear proper protective equipment and self contained breathing apparatus with full faceplate. Move exposed containers from fire area if possible. Use water to keep fire exposed containers cool.

Unusual Fire & Explosive Hazards: Contact with strong oxidizers may cause fire. Closed containers may explode due to pressure build up when exposed to extreme heat. Heavy dusting conditions may cause explosion hazard. Care should be taken to avoid dust generation during handling.

Based upon the Bureau of Mines rating system, CAO-5 is classified as a "severe" explosion hazard. CAO-5 when dispersed as a dust cloud can be ignited from an electrical ignition source. Once ignited, it generates pressure at a maximum rate of 9,500 Psi/Sec achieving a maximum pressure of 83 Psig.

4.4 R - PHRASES

4.5 S - PHRASES

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N/A: Not Applicable or Not Available

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### Section 5 - HEALTH HAZARD DATA

Primary Routes of Entry or Exposure: Inhalation, Eye Contact, Skin Contact, and Ingestion

Health Hazards - Primary Hazard: Acute and Chronic Exposure

Signs and symptoms of exposure:

Acute Exposure:

1. Inhalation - Excessive inhalation may cause irritation of nasal and respiratory passages.
2. Eyes - Contact may cause severe irritation and/or burns.
3. Skin - Prolonged contact may cause skin irritation and/or burns.
4. Ingestion - Ingestion may cause gastrointestinal tract irritation with nausea, vomiting, abdominal pain, watery or bloody diarrhea and collapse.

Chronic Exposure:

Feeding studies with rats and mice at 50 mg/kg/day for 10 months caused functional changes in the nervous system and liver, and a physical change in the testes. Lower dosages and shorter term exposure (4 months) resulted in no ill effects.

### TOXICOLOGICAL AND ECOLOGICAL INFORMATION :

Oral LD50 (Rat) = 4880 mg/kg

### Emergency & First Aid Procedures:

Inhalation: Remove victim from exposure. If breathing is irregular or stopped, administer CPR or artificial respiration and oxygen. Contact a physician immediately.

Eye Contact: Flush eyes with copious amounts of water for 15 minutes. Contact an ophthalmologist or a physician immediately.

Skin Contact: Wash affected area with soap and water for 15 minutes. If irritation occurs, contact a physician.

Ingestion: If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Contact a physician or poison control center immediately.

Target Organ Effects: Liver and Nervous System - functional changes. Testes - physical changes.

Carcinogen (cancer-causing substance): No

Is not on IARC, NTP, or OSHA Subpart Z lists of carcinogens.: Is Not

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N/A: Not Applicable or Not Available

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#### Section 6 - REACTIVITY DATA

Stability: Stable

Conditions to Avoid: N/A

Incompatibility (materials to avoid): Strong Oxidizing Agents, Strong Acids

Hazardous Decomposition Products: Carbon Dioxide, Carbon Monoxide

Hazardous Polymerization: Will not occur

Conditions to Avoid: N/A

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#### Section 7 - SPILL AND LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Provide ventilation, and remove any source of heat or flame. Wear proper OSHA protective equipment. Sweep up spilled material with a minimum of dusting or vacuum with a filtered outlet vacuuming system. Place the resulting waste in a suitable container for reuse or disposal.

Waste Disposal Method: For disposal, contract with a licensed chemical waste disposal agency. Discharge, treatment, or disposal must be done in accordance with all federal, state, or local regulations.

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#### Section 8 - SPECIAL PROTECTION INFORMATION

Ventilation:	Local Exhaust:	Recommended
	Mechanical:	N/A
	Special:	N/A
	Other:	N/A

Protective Gloves: Neoprene or Rubber

Eye Protection: Chemical Safety Goggles

Other Protections: Wear a rubber apron and a NIOSH approved dust / mist / organic vapor respirator if concentrations exceed acceptable limits or irritation occurs.

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#### Section 9 - SPECIAL PRECAUTIONS

Precautions to be taken in handling & storage: Store in a cool, dry, well ventilated storage area. Do not store near oxidizing agents or strong acids. Do not handle in such a manner that dust is generated. Dust may cause explosion hazard.

Other Precautions: Do not store near food products. Wash hands thoroughly before eating, drinking, or using rest room.

N/A: Not Applicable or Not Available

Section 10 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

	US Department of Transportation	International Maritime Organization	International Air Transportation Association
Shipping Name	N/A	N/A	N/A
Hazard Class	N/A	N/A	N/A
Subsidiary Risk	N/A	N/A	N/A
UN/NA Number	N/A	N/A	N/A
Labels	N/A	N/A	N/A
Reportable Quantity	N/A	N/A	N/A

International Air Transport. Assoc.: Can be transported in passenger and cargo aircraft .

ADR/RID : N/A

Section 11 - REGULATORY INFORMATION

OSHA Hazard Communication Rule (29 CFR1910:1200) Hazardous Ingredients: Yes

CERCLA (40CFR117,302) Notification of Spills: Is not required

SARA Listed: Sections 311 and 312

Toxic Substances Control Act (TSCA) Regulated: Yes

Phenol, 2,2'-methylenebis (6-(1,1-dimethylethyl)-4-methyl

Federal Insecticide, Fungicide, & Rodenticide Act Regulated: No

Resource Conservation & Recovery Act (RCRA) (40 CFR 261) Regulated: No

Clean Water Act (40 CFR 401.15, 40 CFR 116) Listed: No

Clean Air Act (40 CFR 60 Section 111, 40 CFR 61 Section 112) Listed: No

California Propostition 65 Listed: No

N/A: Not Applicable or Not Available

NOIBN : Not Otherwise Indexed By Name

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