



# SAFETY DATA SHEET

## PLENCO 02311

SDS No : PHENOLIC2  
Date Revised : 01/13/2017  
Revision No : 2

### 1. PRODUCT AND COMPANY IDENTIFICATION

**GENERAL USE:** Thermoset plastic molding compound

**PRODUCT DESCRIPTION:** Phenol-formaldehyde novolac containing hexamethylenetetramine molding compound

**CHEMICAL FAMILY:** Phenol-formaldehyde polymer molding compound

**GENERIC NAME:** Phenolic molding compound, 2-stage

#### MANUFACTURER

Plastics Engineering Company  
3518 Lakeshore Road  
Sheboygan, WI 53083

**Emergency Phone:** +(1) 920-458-2127

**Customer Service:** +(1) 920-458-2121

#### 24 HR. EMERGENCY TELEPHONE NUMBERS

Only during NORTH AMERICAN transportation:  
CHEMTREC 1-800-424-9300

### 2. HAZARDS IDENTIFICATION

#### GHS CLASSIFICATIONS

##### Health:

Serious Eye Damage/ Eye Irritation, Category 1  
Skin Sensitization, Category 1B  
Germ Cell Mutagenicity, Category 2  
Target Organ Toxicity (Single exposure), Category 3  
Target Organ Toxicity (Repeated exposure), Category 1

##### Physical:

Combustible Dust

#### GHS LABEL



Health hazard



Corrosion



Exclamation mark

**SIGNAL WORD:** DANGER

#### HAZARD STATEMENTS

H317: May cause an allergic skin reaction.

H318: Causes serious eye damage.

H341: Suspected of causing genetic defects.

H335: May cause respiratory irritation.

H372: Causes damage to organs through prolonged or repeated exposure.

H: May form combustible dust concentrations in air.

**HNOC: HAZARDS NOT OTHERWISE CLASSIFIED OR NOT COVERED BY GHS:**

Organic dust can form highly explosive mixtures when finely suspended in air. Avoid dust-laden atmospheres; minimize dust generation and accumulation. Eliminate sources of ignition, e.g. open flames, sparks or electrostatic discharge, or use explosion proof motors where needed.

#### PRECAUTIONARY STATEMENTS

##### Prevention:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe dust.

P264: Wash hands and forearms 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.

P280: Wear protective gloves/protective clothing/eye protection/face protection.

P281: Use personal protective equipment as required.

#### **Response:**

P302+P352: IF ON SKIN: Wash with plenty of water and soap.

P304+P340: IF INHALED: Remove person to fresh air and keep 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.

P314: Get medical advice/attention if you feel unwell.

P321: Specific treatment: Wash affected areas immediately with plenty of water and soap.

P333+P313: If skin irritation or rash occurs: Get medical advice/attention.

P337+P313: If eye irritation persists: Get medical advice/attention.

P362+P364: Take off contaminated clothing and wash it before reuse.

#### **Storage:**

P405: Store locked up.

#### **Disposal:**

P501: Dispose of contents and empty containers in accordance with local, regional and federal regulations.

### **EMERGENCY OVERVIEW**

#### **IMMEDIATE CONCERNS: HAZARD NOT OTHERWISE CLASSIFIED (HNOC) OR NOT COVERED BY GHS:**

Organic dust can form highly explosive mixtures when finely suspended in air. Avoid dust-laden atmospheres; minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dust does not accumulate on surfaces. Dry powders can build up static electric charges when subjected to the friction of transfer and mixing operations. Implement adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Eliminate all sources of ignition, e.g. open flames, sparks or electrostatic discharge, or use explosion proof motors where needed. Ensure that all areas where explosions could occur are designated appropriately. For recommendations to prevent such explosions and associated damage, consult applicable guidelines such as NFPA 68, "Standard on Explosion Protection by Deflagration Venting", NFPA 69, "Standard on Explosion Prevention Systems" and/ or NFPA 654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids". For more information refer to Section #7 of this SDS.

### **POTENTIAL HEALTH EFFECTS**

**EYES:** Contact may cause eye irritation or damage.

**SKIN:** Contact may cause allergic skin reactions.

**SKIN ABSORPTION:** Skin absorption is unlikely to occur due to the physical form of the product.

**INGESTION:** May be harmful if swallowed.

**INHALATION:** Dust particles may cause respiratory tract irritation, coughing and wheezing.

### **REPRODUCTIVE TOXICITY**

**REPRODUCTIVE EFFECTS:** Not known or believed to be a reproductive toxin.

**TERATOGENIC EFFECTS:** Not known or believed to be teratogenic.

**CARCINOGENICITY:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen.

**MUTAGENICITY:** Phenol is a mutagen, which tested positive in in-vivo and in-vitro assays.

**MEDICAL CONDITIONS AGGRAVATED:** Asthma, Respiratory disorders, Skin Allergies, and Eczema.

**ROUTES OF ENTRY:** Inhalation, ingestion and through skin contact.

**TARGET ORGAN STATEMENT:** Possibility of organ or organ system damage from prolonged exposure; target organs: heart, kidney, liver, skin, central nervous system (CNS), respiratory system. See Section 11 for details.

**IRRITANCY:** Dust particles have the potential to cause mechanical irritation of skin and eyes.

**SENSITIZATION:** Contact may cause allergic skin reactions.

**COMMENTS:** Refer to Section 11 for detailed information on health effects and symptoms.

**AS SOLD** the product is a plastic molding compound: A plastic resin (phenol-formaldehyde polymer) intimately mixed and reacted with one or more of a variety of organic and/or inorganic filling materials. When fully "cured" or reacted, the plastic resin is insoluble, infusible and binds the well- dispersed, embedded filling materials. However, "As Sold" the plastic resin is not completely "cured" or reacted and contains some unreacted ingredients dissolved within it. So dissolved, these chemicals are unlikely to pose a hazard; but because they are hazardous in their pure forms, OSHA requires that they be reported and described as hazardous ingredients. Under normal conditions of storage and handling, no significant amount of hazardous vapors should evolve from the "As Sold" product. Because phenol is more soluble in the resin than in water, there is no likely significant health hazard through skin absorption. The great majority of filling materials are embedded within compound granules that are large enough not to constitute an inhalation hazard. Nevertheless, some particles of plastic resin and/or filling materials may be present in a size that constitutes a respirable dust (including, in some products, up to 1% inorganic filling material mixed in after compounding). This respirable dust may contain one or more of the following materials: carbon black, coal dust, fibrous glass, graphite, mica, mineral wool fiber, talc, and/or wood flour (soft). Chronic inhalation of each of the above has been associated with fibrotic lung disease. For most or all, it has also been associated with increased risk of lung cancer, especially among smokers. Inhalation of dust should be avoidable with proper material handling procedures and good ventilation, but if not, Personal Protective Equipment (PPE) should be worn. The primary acute health risk from exposure to the product "As Sold" is irritation, especially from the dust. Ingestion, inhalation of dust, and contact with skin and eyes should be avoided.

**AS USED** during polymerization (e.g., curing of the product during normal processing) or decomposition (e.g., overheating or burning of the product) small amounts of gaseous ammonia, phenol and formaldehyde (as well as water vapor, carbon monoxide and carbon dioxide) are evolved. Breathing of the fumes can be harmful. If the odor of ammonia or formaldehyde is noticeable, then the airborne concentration of these chemicals should be carefully monitored and ventilation improvements considered; These chemicals begin to be detectable by odor at concentrations approaching or exceeding the PEL. The odor of phenol begins to be noticeable at a concentration about one- fifth the PEL. In any case, adequacy of ventilation can best be determined by use of instruments to monitor airborne concentrations of ammonia, phenol and formaldehyde. Grinding or machining of cured molded material may create a dust that poses a respiratory hazard if inhaled (see above) and may release small amounts of gaseous ammonia.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Phenol Formaldehyde Resin	30 - 60	9003-35-4
Hexamethylenetetramine	2 - 15	100-97-0
Phenol	< 3.5	108-95-2
Formaldehyde	< 0.1	50-00-0
Calcium Hydroxide	0 - 10	1305-62-0
Carbon Black	0 - 12	1333-86-4
Coal Dust	0 - 18	
Graphite (natural)	0 - 40	7782-42-5
Kaolin	0 - 40	1332-58-7
Mica	0 - 60	12001-26-2
Talc	0 - 20	14807-96-6
Wood Flour	0 - 60	

### 4. FIRST AID MEASURES

**EYES:** Immediately flush eyes with copious amounts of water for at least 15 minutes while lifting the eyelids. Seek medical attention if irritation occurs.

**SKIN:** Flush with large amounts of water for at least 10 minutes. Remove contaminated clothing. Seek medical attention if adverse effects occur.

**INGESTION:** If material is swallowed, seek immediately medical attention or advice. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. If vomiting occurs, keep head below hips to prevent aspiration into lungs.

**INHALATION:** Move person to non-contaminated area or outside of the building. If breathing proves difficult, seek immediate medical attention.

#### **SIGNS AND SYMPTOMS OF OVEREXPOSURE**

**EYES:** Redness, burning sensation and tearing (watering) of the eyes.

**SKIN:** Skin dryness or irritation.

**SKIN ABSORPTION:** Skin absorption is unlikely to occur due to the physical form of the material.

**INGESTION:** No effects known.

**INHALATION:** Harmful if inhaled. If breathing is affected, immediately move to fresh air. Seek medical attention if headache, dizziness or visual problems develop. Administer oxygen if breathing difficulty persists.

**ACUTE EFFECTS:** None Expected.

**CHRONIC EFFECTS:** None Expected.

**NOTES TO PHYSICIAN:** If decomposition products are inhaled in a fire, symptoms may be delayed. The person exposed to fumes or decomposition products may need to be kept under medical surveillance.

### **5. FIRE FIGHTING MEASURES**

**FLAMMABLE CLASS:** Not classifiable as a flammable material.

**FLAME PROPAGATION OR BURNING RATE OF SOLIDS:** Product does not sustain fire or propagate flames.

**GENERAL HAZARD:** Avoid the generation or accumulation of dust as combustible particles can potentially form explosive mixtures with air.

**EXTINGUISHING MEDIA:** Dry Chemical, carbon dioxide (CO<sub>2</sub>), alcohol resistant foam or water spray.

**HAZARDOUS COMBUSTION PRODUCTS:** Phenol, formaldehyde, ammonia, carbon dioxide and carbon monoxide.

**EXPLOSION HAZARDS:** Clouds of flammable particles suspended in air may form explosive mixtures. Avoid the generation of dust/ air mixtures and remove any sources of ignition, e.g. flames, sparks, flares or electrostatic discharge.

**SENSITIVE TO STATIC DISCHARGE:** Electrostatic discharge may trigger a dust explosion if sufficient quantities of combustible particles are suspended in air.

**SENSITIVITY TO IMPACT:** Not Applicable

### **6. ACCIDENTAL RELEASE MEASURES**

**SMALL SPILL:** With shovel and scoop, place material into clean, dry container; move containers from spill area. Minimize airborne particulates. Use Personal Protective Equipment (PPE) to protect against inhalation of dust. Wear eye protection, gloves and avoid contact with skin.

**LARGE SPILL:** Use the same methods described for small spills. Place material into appropriate containers for disposal.

**RELEASE NOTES:** Inform the relevant authorities if the product has been discharged into the environment, e.g. sewers, waterways, soil or air.

**SPECIAL PROTECTIVE EQUIPMENT:** Not Established

### **7. HANDLING AND STORAGE**

**HANDLING:** Use with adequate ventilation and utilize Personal Protection Equipment (PPE) if exposure limits are exceeded. Point source exhaust recommended to remove airborne dust particles during use. Avoid sources of ignition, e. g. heat, flames or electrostatic charges, or use explosion proof motors where needed. Avoid contact with eyes and repeated or prolonged contact with skin. Wash hands thoroughly after handling. Keep away from food or drinking water.

**STORAGE:** Store in original unopened or closed packaging, ideally at temperature less than 86°F (30°C) and under humidity control.

**SPECIAL SENSITIVITY:** Like most organic compounds this product is sensitive to strong oxidizing agents and may either decompose or ignite when mixed with same.

**ELECTROSTATIC ACCUMULATION HAZARD:** Point source exhaust recommended to remove dust particles evolved during handling or processing. Control build-up of dust and eliminate sources of ignition, e.g. open flames, sparks or electrostatic

discharges, or use explosion proof motors where needed.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE GUIDELINES

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)				
Chemical Name	EXPOSURE LIMITS			
	Type		ppm	mg/m <sup>3</sup>
Phenol	OSHA PEL	TWA	5	19
	ACGIH TLV	TWA	5	19
	Supplier OEL	TWA	NL	NL
		STEL	NL	NL
Formaldehyde	OSHA PEL	TWA	0.75	
		STEL	2	
	Supplier OEL	TWA	NL	NL
		STEL	NL	NL
Calcium Hydroxide	OSHA PEL	TWA		15T 5R
	ACGIH TLV	TWA		5
Carbon Black	OSHA PEL	TWA		3.5
	ACGIH TLV	TWA		3.5
Coal Dust	OSHA PEL	TWA		10
	ACGIH TLV	TWA		2
Graphite (natural)	OSHA PEL	TWA	15cf	
	ACGIH TLV	TWA		2
Kaolin	OSHA PEL	TWA		15
	ACGIH TLV	TWA		2
Mica	OSHA PEL	TWA	20cf	
	ACGIH TLV	TWA		3
Talc	OSHA PEL	TWA	20cf	
	ACGIH TLV	TWA		2
Wood Flour	OSHA PEL	TWA		15
	ACGIH TLV	TWA		1

**ENGINEERING CONTROLS:** If the handling or processing of the resin generates dust, use ventilation to keep exposure to airborne particles below the permissible exposure limits. Monitoring of the workplace atmosphere may be required to ensure the effectiveness of the engineering controls and/ or the necessity to utilize Personal Protection Equipment (PPE).

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Safety glasses with side shields are recommended. Snug-fitting goggles should be worn in dusty work environments.

**SKIN:** Wear protective clothing and chemical resistant gloves to prevent skin contact. Remove contaminated clothing immediately and wash thoroughly before reuse.

**RESPIRATORY:** If exposure limits are exceeded, use properly fitted respiratory protection equipment particularly selected for the prevailing conditions.

**PROTECTIVE CLOTHING:** Work gloves and skin protection are recommended for the handling of this product. Launder contaminated work clothing separate from regular laundry.

**WORK HYGIENIC PRACTICES:** Maintain a clean work environment and practice good hygiene. Wash hands, face and forearms thoroughly after handling of this product, before eating or drinking and at the end of the work shift.

**OTHER USE PRECAUTIONS:** Not Available

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**ODOR:** Slight odor of phenol

**APPEARANCE:** Granular, nodular, pellet, or briquette

**pH:** Not Applicable

**PERCENT VOLATILE:** Not Applicable

**FLASH POINT AND METHOD:** Not Applicable

**FLAMMABLE LIMITS:** LEL: Dust. 0.030 oz. per cubic foot to UEL: No data

**VAPOR PRESSURE:** Not Applicable

**VAPOR DENSITY:** Not Applicable

**BOILING POINT:** Not Applicable

**THERMAL DECOMPOSITION:** Not Available

**SOLUBILITY IN WATER:** Negligible

**EVAPORATION RATE:** Not Applicable

**SPECIFIC GRAVITY:** See technical data sheet

**OXIDIZING PROPERTIES:** Not Applicable

## 10. STABILITY AND REACTIVITY

**REACTIVITY:** Stable

**HAZARDOUS POLYMERIZATION:** Should not occur.

**STABILITY:** This product is stable under normal conditions of storage and use.

**CONDITIONS TO AVOID:** Avoid storage at high temperatures or exposure to open flames.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Like most organic compounds this product is sensitive to strong oxidizing agents and may either decompose or ignite when mixed with same.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Vapors evolved during decomposition may contain phenol, formaldehyde, ammonia, carbon dioxide and carbon monoxide.

**INCOMPATIBLE MATERIALS:** Avoid contact with strong oxidizers as this may lead to violent reactions.

## 11. TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY

Chemical Name	ORAL LD <sub>50</sub>	DERMAL LD <sub>50</sub>	INHALATION LC <sub>50</sub>
Phenol	317 mg/ kg BW (rat)	630 mg/ kg BW (rabbit)	316 mg/ m <sup>3</sup> (rat/ 1h)
Formaldehyde	800 mg/ kg BW (rat)	270 mg/ kg BW (rabbit)	578 mg/ m <sup>3</sup> (rat/ 1h)
Calcium Hydroxide	7340 mg/ kg BW (rat)		

**DERMAL LD<sub>50</sub>:** > 5000 mg/ kg bodyweight (rabbit)

**Notes:** Mixture - Acute Toxicity Estimate (ATE)

**ORAL LD<sub>50</sub>:** > 5000 mg/ kg bodyweight (rat)

**Notes:** Mixture - Acute Toxicity Estimate (ATE)

**INHALATION LC<sub>50</sub>:** No data available.

**SKIN CORROSION/IRRITATION:** No data available.

**SERIOUS EYE DAMAGE/IRRITATION:** Contact may cause severe eye irritation or damage.

**RESPIRATORY OR SKIN SENSITISATION:** May cause allergic respiratory and skin reactions.

**GERM CELL MUTAGENICITY:** Phenol: Classified as a mutagen (Category 2).

**CARCINOGENICITY**

Chemical Name	NTP Status	IARC Status	OSHA Status
Phenol	Not Available	Group 3: The agent is not classifiable as to its carcinogenicity in humans	Not Available
Formaldehyde	known to be a human carcinogen	Group 1: carcinogenic to humans	potential human carcinogen

**NOTES:** Less than 0.1% formaldehyde present.

**REPRODUCTIVE TOXICITY:** None known.

**STOT-REPEATED EXPOSURE:** Prolonged or repeated exposure may lead to chronic effects. Target organs: heart, liver, kidney, skin, central nervous system (CNS), respiratory system.

**GENERAL COMMENTS:** This product may contain a small amount crystalline silica (quartz), as a natural occurring impurity in mineral. The mineral is encapsulated within the molding compound by resin. Significant exposure to free respirable quartz is not expected under normal conditions of use and processing of this product. Respirable quartz may be released by grinding, machining or abrading of this product. The NTP's Report on Carcinogens lists crystalline silica (respirable size) as a known human carcinogen. IARC concluded that there is sufficient evidence in humans for the carcinogenicity of inhaled (respirable) crystalline silica.

**12. ECOLOGICAL INFORMATION**

**COMMENTS:** [This section deliberately left blank]

**13. DISPOSAL CONSIDERATIONS**

**PRODUCT DISPOSAL:** Avoid or minimize the generation of waste. Contact a licensed waste disposal contractor to manage the disposal of non-recyclable material.

**GENERAL COMMENTS:** Dispose of in compliance with local, state, federal and international regulations.

**14. TRANSPORT INFORMATION**

**DOT (DEPARTMENT OF TRANSPORTATION)**

**PRIMARY HAZARD CLASS/DIVISION:** Not hazardous

**AIR (ICAO/IATA)**

**PRIMARY HAZARD CLASS/DIVISION:** Not hazardous

**15. REGULATORY INFORMATION**

**UNITED STATES**

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)**

**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	Wt.%	CAS
Phenol	< 3.5	108-95-2

**CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT)**

Chemical Name	Wt.%	CERCLA RQ
Phenol	< 3.5	1,000
Formaldehyde	< 0.1	100

**TSCA (TOXIC SUBSTANCE CONTROL ACT)**

Chemical Name	CAS
Phenol Formaldehyde Resin	9003-35-4
Hexamethylenetetramine	100-97-0
Phenol	108-95-2
Formaldehyde	50-00-0
Calcium Hydroxide	1305-62-0
Carbon Black	1333-86-4
Graphite (natural)	7782-42-5
Kaolin	1332-58-7
Talc	14807-96-6

**CLEAN AIR ACT**

Chemical Name	Wt.%	CAS
Formaldehyde	< 0.1	50-00-0

**CALIFORNIA PROPOSITION 65: California law requires the following statement to be included: "Contains a chemical (Formaldehyde) known to the State of California to cause cancer."**

Chemical Name	Wt.%	Listed
Formaldehyde	< 0.1	Cancer
Carbon Black	0 - 12	Cancer
Wood Flour	0 - 60	Cancer

**16. OTHER INFORMATION**

**PREPARED BY:** T. Olmsted    **Date Revised:** 01/13/2017

**REVISION SUMMARY:** This SDS replaces the 08/03/2016 SDS.

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