

PLIOBOND® 25 ADHESIVE  
167516

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**

Ashland  
P.O. Box 2219  
Columbus, OH 43216

Regulatory Information Number  
Telephone  
Emergency telephone

1-800-325-3751  
614-790-3333  
1-800-ASHLAND  
(1-800-274-5263)

Product name  
Product code  
Product Use Description

PLIOBOND® 25 ADHESIVE  
167516  
No data

**Packaged & Marketed Nationally by**  
**THE RUSCOE COMPANY**  
485 Kenmore Blvd. • Akron, Ohio 44301  
330-253-8148 • Toll Free 800-293-8148  
Fax 330-253-2933

**2. HAZARDS IDENTIFICATION**

**Emergency Overview**

Appearance: liquid, tan

DANGER! POISON! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY BE HARMFUL. MAY CAUSE SEVERE BURNS OF RESPIRATORY AND DIGESTIVE TRACTS. MAY BE FATAL IF INHALED. MAY BE FATAL IF SWALLOWED. MAY BE FATAL IF ABSORBED THROUGH THE SKIN. PROLONGED OR REPEATED CONTACT MAY DRY THE SKIN AND CAUSE IRRITATION AND BURNS. CAUSES SEVERE BURNS OF THE EYES AND SKIN.

**Potential Health Effects**

**Routes of exposure**

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion

**Eye contact**

Can cause permanent eye injury. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure the cornea and cause blindness.

**Skin contact**

Can cause permanent skin damage. Symptoms may include redness, burning, and swelling of skin, burns, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin

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burns, and other skin damage. Passage of this material into the body through the skin is possible, and skin contact may be harmful or fatal.

### **Ingestion**

Swallowing this material may be harmful or fatal. Symptoms may include severe stomach and intestinal irritation (nausea, vomiting, diarrhea), abdominal pain, and vomiting of blood. Swallowing this material may cause burns and destroy tissue in the mouth, throat, and digestive tract. Low blood pressure and shock may occur as a result of severe tissue injury. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

### **Inhalation**

Breathing this material may be harmful or fatal. Symptoms may include severe irritation and burns to the nose, throat, and respiratory tract. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

### **Aggravated Medical Condition**

Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias. Individuals with preexisting heart disorders may be more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material. Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, lung (for example, asthma-like conditions), blood-forming system, Central nervous system, Gastrointestinal tract, Liver, kidney, Heart

### **Symptoms**

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), thirst, irritation (nose, throat, airways), Lung irritation, Cough, Difficulty in breathing, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, sleep disturbances, Convulsions, Lowered blood pressure, Weakness, low body temperature, Abdominal pain, effects on heart rate, respiratory depression (slowing of the breathing rate), irregular heartbeat, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), high blood sugar, allergic reaction (causes narrowing of the air passages of the lungs), sweating, flushing, hives, rapid heart rate, and lowered blood pressure), lung edema (fluid buildup in the lung tissue), pneumonia, shock, respiratory failure, coma

### **Target Organs**

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Based on animal studies, exposure to methyl ethyl ketone (MEK) increases the onset of peripheral neuropathy caused by exposure to methyl butyl ketone (MBK), and/or n-hexane, and/or ethyl butylketone. MEK alone has not been shown to cause peripheral neuropathy. Chronic phenol poisoning is characterized by digestive disorders such as anorexia and weight loss, and by nervous disorders, with headache, fainting, vertigo, and mental disturbances. This material (or a component) shortens the time of onset or worsens the liver and kidney damage induced by other chemicals. Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: nervous system effects, mild, reversible liver effects, mild, reversible kidney effects, blood abnormalities, liver abnormalities, kidney damage, liver damage, lung damage, heart damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: central nervous system effects, effects on lung function

#### **Carcinogenicity**

Human studies have associated nasopharyngeal cancers (area of the upper throat behind the nose) and possibly other respiratory cancers (nasal cavity and sinuses) with formaldehyde exposure in the workplace. Although the evidence is not conclusive, some studies suggest an association between workplace formaldehyde exposure and leukemia. In studies in rats, inhalation of formaldehyde has caused nasal tumors, while ingestion in drinking water has caused leukemia and gastrointestinal tract tumors. Formaldehyde is listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP) and the Occupational Safety and Health Administration (OSHA).

#### **Reproductive hazard**

This material (or a component) may be harmful to the human fetus based on positive test results with laboratory animals.

#### **Other information**

This material can form dust which may cause skin or mucous membrane irritation. Symptoms may include redness, burning, and swelling. Although they may cause respiratory tract irritation, nuisance dusts do not form scar tissue or affect the structure of air spaces in the lungs. Their effects on the tissues are potentially reversible. Formaldehyde has been positive in tests which measure permanent changes to the DNA in germ cells of mammals. Changes in these cells can be passed on to future generations. The relevance of this finding to human health is uncertain.

### **3. COMPOSITION/INFORMATION ON INGREDIENTS**

# ASHLAND

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Components	CAS-No.	Concentration
ACETONE	67-64-1	>=70-<80%
METHYL ETHYL KETONE	78-93-3	>=5-<10%
CALCIUM CARBONATE	471-34-1	>=1.5-<5%
PHENOL	108-95-2	>=1-<1.5%
ORTHO CRESOL	95-48-7	>=0.1-<0.5%
FORMALDEHYDE	50-00-0	>=0.1-<0.5%

#### 4. FIRST AID MEASURES

##### Eyes

If material gets into the eyes, immediately flush eyes gently with water for at least 15 minutes while holding eyelids apart. If symptoms develop as a result of vapor exposure, immediately move individual away from exposure and into fresh air before flushing as recommended above. Seek immediate medical attention.

##### Skin

Immediately flush skin with water for at least 15 minutes while removing contaminated clothing and shoes. Seek immediate medical attention. Wash clothing before reuse and discard contaminated shoes.

##### Ingestion

Do not induce vomiting. Concentrations greater than 1.5% produce irritation and greater than 5% are corrosive; vomiting can cause further damage to the mouth and throat. Do not dilute the swallowed material, since this may enhance its absorption. Seek immediate medical attention. If possible, do not leave the individual unattended. Vomiting and diarrhea may occur spontaneously.

##### Inhalation

If symptoms develop, immediately move individual away from exposure and into fresh air. Seek immediate medical attention; keep person warm and quiet. If person is not breathing, begin artificial respiration. If breathing is difficult, administer oxygen.

##### Notes to physician

**Hazards:** This material is an aspiration hazard. Potential danger from aspiration must be weighed against possible oral toxicity (See Section 2 - Swallowing) when deciding whether to induce vomiting. This material (or a component) has produced hyperglycemia and ketosis following substantial ingestion. Ingestion of large amounts or other significant exposure to this material (or a component) may cause alkalosis.

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Excessive calcium intake may cause gastrointestinal symptoms, hypertension, hypercalcemia, kidney stones, and may inhibit absorption of iron, zinc, and possibly other trace elements. Inhalation of high concentrations of this material, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. Sympathomimetic drugs may initiate cardiac arrhythmias in persons exposed to this material. Pulmonary edema may be delayed. Formaldehyde ingestion can cause a reduction in body temperature, jaundice, acidosis, and hematuria; and may also cause albuminuria and anuria. Metabolic acidosis and hyperlactatemia may occur as a result of acute inhalation exposure.

**Treatment:** Phenol adsorbs to activated charcoal, and it may be preferable to ipecac-induced emesis because seizures or coma may onset rapidly and because of the corrosive effects of phenol. A usual activated charcoal dose in adults is 30-100 g and in children is 15-30 g. Activated charcoal should be administered with, or followed by, a cathartic. If endoscopy is planned, charcoal may obscure visualization of affected areas. Gastric lavage may be indicated if it is performed soon after ingestion or in patients who are comatose or at risk of seizures. Monitor for seizures, metabolic acidosis and ventricular dysrhythmias.

## 5. FIRE-FIGHTING MEASURES

### **Suitable extinguishing media**

Water spray, Dry chemical, Carbon dioxide (CO<sub>2</sub>)

### **Hazardous combustion products**

carbon dioxide and carbon monoxide, calcium oxide, acid vapors, toxic fumes, Aldehydes, formic acid, Methanol

### **Precautions for fire-fighting**

Material is volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). Water may be ineffective for extinguishment unless used under favorable conditions by experienced fire fighters. Use water spray to cool fire exposed containers and structures until fire is out if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

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## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions

For personal protection see section 8. Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

### Environmental precautions

Prevent spreading over a wide area (e.g. by containment or oil barriers). Do not let product enter drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

### Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

### Other information

Comply with all applicable federal, state, and local regulations. Suppress (knock down) gases/vapours/mists with a water spray jet.

## 7. HANDLING AND STORAGE

### Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Static ignition hazard can result from handling and use. Electrically bond and ground all containers, personnel and equipment before transfer or use of material. Special precautions may be necessary to dissipate static electricity for non-conductive containers. Use proper bonding and grounding during product transfer as described in National Fire Protection Association document NFPA 77.

### Storage

Store in a cool, dry, ventilated area, away from incompatible substances.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Guidelines

<b>ACETONE</b>	<b>67-64-1</b>
ACGIH	time weighted average
	500 ppm

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ACGIH	Short term exposure limit	750 ppm
NIOSH	Recommended exposure limit (REL):	250 ppm
NIOSH	Recommended exposure limit (REL):	590 mg/m3
OSHA Z1	Permissible exposure limit	1,000 ppm
OSHA Z1	Permissible exposure limit	2,400 mg/m3

**METHYL ETHYL KETONE** **78-93-3**

ACGIH	time weighted average	200 ppm
ACGIH	Short term exposure limit	300 ppm
NIOSH	Recommended exposure limit (REL):	200 ppm
NIOSH	Recommended exposure limit (REL):	590 mg/m3
NIOSH	Short term exposure limit	300 ppm
NIOSH	Short term exposure limit	885 mg/m3
OSHA Z1	Permissible exposure limit	200 ppm
OSHA Z1	Permissible exposure limit	590 mg/m3

**CALCIUM CARBONATE** **471-34-1**

US CA OEL	Time Weighted Average (TWA)	5 mg/m3	Respirable fraction.
	Permissible Exposure Limit (PEL):		
US CA OEL	Time Weighted Average (TWA)	10 mg/m3	Total dust.
	Permissible Exposure Limit (PEL):		
NIOSH	Recommended exposure limit (REL):	5 mg/m3	Respirable.
NIOSH	Recommended exposure limit (REL):	10 mg/m3	Total
OSHA Z1	Permissible exposure limit	5 mg/m3	Respirable fraction.
OSHA Z1	Permissible exposure limit	15 mg/m3	Total dust.
OSHA Z1A	time weighted average	5 mg/m3	Respirable fraction.
OSHA Z1A	time weighted average	15 mg/m3	Total dust.

**PHENOL** **108-95-2**

ACGIH	time weighted average	5 ppm
NIOSH	Recommended exposure limit (REL):	5 ppm
NIOSH	Recommended exposure limit (REL):	19 mg/m3
NIOSH	Ceiling Limit Value and Time Period (if specified):	15.6 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	60 mg/m3
OSHA Z1	Permissible exposure limit	5 ppm
OSHA Z1	Permissible exposure limit	19 mg/m3

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FORMALDEHYDE		50-00-0
ACGIH	Ceiling Limit Value:	0.3 ppm
NIOSH	Recommended exposure limit (REL):	0.016 ppm
NIOSH	Recommended exposure limit (REL):	0.016 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.1 ppm
NIOSH	Ceiling Limit Value and Time Period (if specified):	0.1 ppm
OSHA	time weighted average	0.75 ppm
OSHA	Short term exposure limit	2 ppm
OSHA	OSHA Action level:	0.5 ppm

### General advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

### Exposure controls

Mechanical ventilation systems used to ventilate corrosive storage or process areas must be designed with components that are corrosion resistant.

### Eye protection

Wear chemical splash goggles and face shield when there is potential for exposure of the eyes or face to liquid, vapor or mist. Maintain eye wash station in immediate work area.

### Skin and body protection

Wear appropriate chemical impervious clothing and boots whenever there is potential for skin contact with product. Launder clothing before reuse. Maintain safety shower at all locations where skin contact could occur. Contact your local safety equipment supplier to assist the facility in determining proper selection of personal protective equipment for the applications/operations present at your facility.

Wear resistant gloves (consult your safety equipment supplier).

Discard gloves that show tears, pinholes, or signs of wear.

### Respiratory protection

A NIOSH-approved air-purifying respirator with an appropriate cartridge and/or filter may be permissible under certain circumstances where airborne concentrations are



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expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined. Protection provided by air-purifying respirators is limited. Use a positive pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are not known or any other circumstances where an air-purifying respirator may not provide adequate protection.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	liquid
Form	No data
Colour	tan
Odour	No data
Boiling point/boiling range	No data
pH	No data
Flash point	-4 °F / -20 °C, Seta closed cup
Evaporation rate	1 (Ethyl Ether)
Explosion limits	No data
Vapour pressure	No data
Vapour density	No data
Density	0.864 g/cm <sup>3</sup> @ 77.00 °F / 25.00 °C 7.2 lb/gal @ 77.00 °F / 25.00 °C
Solubility	No data
Partition coefficient: n-octanol/water	No data
log Pow	no data available
Autoignition temperature	No data

**10. STABILITY AND REACTIVITY**

**Stability**  
Stable.

**Conditions to avoid**  
Heat, flames and sparks.

**Incompatible products**  
Acids, alkalis, Amines, halogens, peroxides, Reducing agents, Strong oxidizing agents, Copper, Copper alloys, aluminum salts, 1,3-butadiene, aluminum, halogenated hydrocarbons, Iron, Lead, magnesium, Zinc, isocyanates, phenols, urea

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**Hazardous decomposition products**

carbon dioxide and carbon monoxide, calcium oxide, acid vapors, Aldehydes

**Hazardous reactions**

Formaldehyde reacts with peroxides, phenol, strong acids, amines and strong oxidizing agents. Formaldehyde reacts violently with nitrogen dioxide, nitromethane, perchloric acid, perchloric acid-aniline mixtures, or peroxyformic acid to yield explosive compounds. It reacts with hydrochloric acid or to organic chlorides to form the carcinogen, bis(chloromethyl)ether.

**Thermal decomposition**

No data

**11. TOXICOLOGICAL INFORMATION**

**Acute oral toxicity**

ACETONE	LD 50 Rat: 5,800 mg/kg
METHYL ETHYL KETONE	LD 50 Rat: 4,500 - 6,800 mg/kg LD 50 Rat: 2,300 - 3,500 mg/kg LD 50 Mouse: 670 mg/kg LD 50 Rat: 2,300 - 3,500 mg/kg
CALCIUM CARBONATE	LD 50 Rat: 6,450 mg/kg
PHENOL	LD 50 Rat: 317 mg/kg
ORTHO CRESOL	LD 50 Rat: 121 mg/kg
FORMALDEHYDE	LD 50 Rat: 100 mg/kg LD 50 Mouse: 42 mg/kg

**Acute inhalation toxicity**

ACETONE	LC 50 Rat: > 16000 ppm, 4 h
METHYL ETHYL KETONE	LC 50 Rat: 11,700 mg/l , LC 50 Mouse: 11,000 mg/l , LC 50 Rat: 11,700 mg/l , 4 h
CALCIUM CARBONATE	no data available
PHENOL	LC 50 Rat: 316 mg/m3 . 4 h
ORTHO CRESOL	LC 50 Rat: > 1,220 mg/m3 , 1 h LC 50 Mouse: 0.179 mg/l , 2 h
FORMALDEHYDE	LC 50 Rat: 203 mg/m3 , 2 h

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**Acute dermal toxicity**

ACETONE	LD 50 Rabbit: > 20,000 mg/kg
METHYL ETHYL KETONE	LD 50 Rabbit: > 8,000 mg/kg LD 50 Rabbit: > 5 g/kg
CALCIUM CARBONATE	no data available
PHENOL	LD 50 Rabbit: 850 mg/kg
ORTHO CRESOL	LD 50 Rabbit: 890 mg/kg
FORMALDEHYDE	LD 50 Rabbit: 288 mg/kg

**12. ECOLOGICAL INFORMATION**

**Aquatic toxicity**

**Acute and Prolonged Toxicity to Fish**

No data

**Acute Toxicity to Aquatic Invertebrates**

No data

**Environmental fate and pathways**

No data

**13. DISPOSAL CONSIDERATIONS**

**Waste disposal methods**

Destroy by liquid incineration in accordance with applicable regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

**14. TRANSPORT INFORMATION**

**IMDG:**

UN1133, ADHESIVES 3, II

**IATA\_P:**



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**SARA 313 Component(s)**

PHENOL	108-95-2	1.1076%
FORMALDEHYDE	50-00-0	0.137%

**Reportable quantity - Product**

US. EPA CERCLA Hazardous Substances (40 CFR 302) 7016 lbs

**Reportable quantity - Components**

ACETONE	67-64-1	5000 lbs
METHYL ETHYL KETONE	78-93-3	5000 lbs
CALCIUM CARBONATE	471-34-1	none
PHENOL	108-95-2	1000 lbs
ORTHO CRESOL	95-48-7	100 lbs
FORMALDEHYDE	50-00-0	100 lbs

	<b>Health</b>	<b>Flammability</b>	<b>Reactivity</b>	<b>Other</b>
<b>HMIS</b>	3*	3	2	
<b>NFPA</b>	3	3	2	

**16. OTHER INFORMATION**

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).