

PLIOBOND® 20 ADHESIVE 571656

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

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone	1-800-ASHLAND (1-800-274-5263)

Product name	PLIOBOND® 20 ADHESIVE
Product code	571656
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, tan

WARNING! FLAMMABLE LIQUID AND VAPOR. MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CAUSES EYE IRRITATION. MAY CAUSE SKIN AND RESPIRATORY TRACT IRRITATION. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE DERMATITIS AND BURNS. MAY CAUSE ALLERGIC SKIN REACTION.

Potential Health Effects

Routes of exposure

Inhalation, Skin contact, Eye Contact, Ingestion

Eye contact

Can cause severe eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

Skin contact

Can cause skin irritation. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, burns and other skin damage. Additional symptoms of skin contact may include: allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects)

Ingestion

PLIOBOND® 20 ADHESIVE 571656

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

Breathing of vapor or mist is possible. Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: skin, lung (for example, asthma-like conditions) Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: Skin, lung (for example, asthma-like conditions), Liver, kidney, Central nervous system, Gastrointestinal tract, Heart, nervous system, 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 maybe more susceptible to arrhythmias (irregular heartbeats) if exposed to high concentrations of this material.

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), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) 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), irritation (nose, throat, airways), central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness), cough, weakness, low body temperature, lowered blood pressure, Abdominal pain, effects on heart rate, respiratory depression (slowing of the breathing rate), difficulty in breathing, irregular heartbeat, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), lung edema (fluid buildup in the lung tissue), shock, convulsions, respiratory failure, coma, thirst, lung irritation, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, sleep disturbances, allergic reaction (causes narrowing of the air passages of the lungs, sweating, flushing, hives, rapid heart rate, and lowered blood pressure), pneumonia

Target Organs

PLIOBOND® 20 ADHESIVE 571656

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., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:., mild, reversible liver effects, mild, reversible kidney effectsBased 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., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:., mild, reversible liver effects, mild, reversible kidney effects, 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., nervous system effects, blood 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, liver abnormalities, 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.

PLIOBOND® 20 ADHESIVE 571656

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
METHYL ETHYL KETONE	78-93-3	>=70-<80%
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 symptoms develop, move individual away from exposure and into fresh air. Flush eyes gently with water while holding eyelids apart. If symptoms persist or there is any visual difficulty, seek medical attention.

Skin

Remove contaminated clothing. Flush exposed area with large amounts of water. If skin is damaged, seek immediate medical attention. If skin is not damaged and symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

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 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. Ingestion of large amounts or other significant exposure to this material (or a component) may cause alkalosis. Excessive calcium intake may cause gastrointestinal symptoms, hypertension,

PLIOBOND® 20 ADHESIVE 571656

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 maybe 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 mist, Dry powder, Foam, Carbon dioxide (CO₂)

Hazardous combustion products

carbon dioxide and carbon monoxide, Hydrogen cyanide (hydrocyanic acid), nitrogen compounds, phenols, various hydrocarbons May form:, carbon dioxide and carbon monoxide, acid vapors

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.

Flammability Class for Flammable Liquids

Flammable Liquid Class IB

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

PLIOBOND® 20 ADHESIVE 571656

For personal protection see section 8. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump or vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminated absorbent, soil and other materials to containers for disposal.

Environmental precautions

No data

Methods for cleaning up

Absorb liquid on vermiculite, floor absorbent or other absorbent material.

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

No data

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

METHYL ETHYL KETONE

78-93-3

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

PLIOBOND® 20 ADHESIVE 571656

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	
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

PLIOBOND® 20 ADHESIVE 571656

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Eye protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin and body protection

To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

Wear resistant gloves such as:

Natural Rubber

Respiratory protection

If workplace exposure limit(s) of product is exceeded (see exposure guidelines), a NIOSH approved air-purifying particulate/organic vapor/acid gas combination cartridge is recommended in the absence of proper environmental controls or when there is a potential for dust/vapor inhalation.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	No data
Colour	tan
Odour	No data
Boiling point/boilingrange	176.00 °F / 176 °F@ 760.00 mmHg
pH	No data
Flash point	23 °F / -5 °C, Tag open cup
Evaporation rate	1 (Ethyl Ether)
Explosion limits	2.0 %(V) 12.0 %(V)
Vapour pressure	71.00 mmHg @ 68.00 °F / 20.00 °C
Vapour density	2.5 (AIR=1)
Density	0.8629 g/cm ³ @ 77 °F / 25 °C 7.18 lb/gal @ 77 °F / 25 °C
Solubility	No data
Partition coefficient: n-octanol/water	No data
Autoignition temperature	No data

PLIOBOND® 20 ADHESIVE 571656

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Avoid contact with:, excessive heat

Incompatible products

Avoid contact with:, strong oxidizing agents
Avoid contact with:, Copper, Copper alloys, strong alkalis, strong oxidizing agents, aluminum salts, strong mineral acids, 1,3-butadiene, aluminum, halogenated hydrocarbons, halogens, Iron, Lead, magnesium, Zinc, isocyanates

Hazardous decomposition products

carbon dioxide and carbon monoxide, Hydrogen cyanide (hydrocyanic acid), nitrogen compounds, phenols, various hydrocarbons
May form:, carbon dioxide and carbon monoxide, acid vapors

Hazardous reactions

Product will not undergo hazardous polymerization.

Thermal decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

METHYL ETHYL KETONE	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: 120 mg/kg
FORMALDEHYDE	LD 50 Mouse: 42 mg/kg LD 50 Rat: 100 mg/kg

Acute inhalation toxicity

PLIOBOND® 20 ADHESIVE 571656

METHYL ETHYL KETONE	LC 50 Rat: 11,700 mg/l , 4 h
PHENOL	LC 50 Rat: 316 mg/m3 , 4 h
ORTHO CRESOL	LC 50 Mouse: 0.179 mg/l , LC 50 Rat: > 1,220 mg/m3 , 1 h
FORMALDEHYDE	LC 50 Rat: 203 mg/m3 , 2 h

Acute dermal toxicity

METHYL ETHYL KETONE	LD 50 Rabbit: > 5 g/kg
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

PLIOBOND® 20 ADHESIVE 571656

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:

UN1133, Adhesives 3, II

IATA_C:

UN1133, Adhesives 3, II

CFR_ROAD:

UN1133, Adhesives 3, II

CFR_RAIL:

UN1133, Adhesives 3, II

CFR_INWTR:

UN1133, Adhesives 3, II

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

California Prop. 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

1,3, BUTADIENE

ARSENIC

LEAD

ACRYLONITRILE

VINYLCYCLOHEXENE, 4-

QUARTZ / SAND

FORMALDEHYDE

WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

ASHLAND
SAFETY DATA SHEET

Page: 12
Revision Date: 01/24/2008
Print Date: 2/5/2009
MSDS Number: R0171288
Version: 1.5

PLIOBOND® 20 ADHESIVE 571656

LEAD
1,3, BUTADIENE

SARA Hazard Classification Fire Hazard
 Acute Health Hazard
 Chronic Health Hazard

SARA 313 Component(s)
PHENOL 108-95-2 1.088%
FORMALDEHYDE 50-00-0 0.1346%

	Health	Flammability	Reactivity	Other
HMIS	2*	3	0	
NFPA	2	3	0	

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).