09-03812
09-03813
09-03814

ASHLAND
SAFETY DATA SHEET

Revision Date: 09/19/2008
Print Date: 2/11/2010
MSDS Number: A-66
Version: 1.0

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

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 maybe 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

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

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.

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 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 spray, Dry chemical, Carbon dioxide (CO2)

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.

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

ACETONE		67-64-1
ACGIH	time weighted average	500 ppm

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) Permissible Exposure Limit (PEL):	5 mg/m3	Respirable fraction.
US CA OEL	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):	10 mg/m3	Total dust.
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

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 persmissible under certain circumstances where airborne concentrations are

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/cm3 @ 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

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

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:

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
IMDG_ROAD:
UN1133, ADHESIVES 3, II
IMDG_RAIL:
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
BENZENE
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.
BENZENE
LEAD
1,3, BUTADIENE

SARA Hazard Classification Fire Hazard
Acute Health Hazard
Chronic Health Hazard

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

	Health	Flammability	Reactivity	Other
HMIS	3*	3	2	
NFPA	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).

09-03812
09-28100
1/17/14

ASHLAND
SAFETY DATA SHEET

Revision Date: 01/28/2011
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MSDS Number: A-66
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Pliobond™ 25 ADHESIVE
™ Trademark, Ashland or its subsidiaries, registered in various countries153106

Packaged & Marketed Nationally by
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330-253-8148 • TOLL FREE 800-293-8148
FAX 330-253-2933

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

Ashland P.O. Box 2219 Columbus, OH 43216	Regulatory Information Number Telephone Emergency telephone number	1-800-325-3751 614-790-3333 1-800-ASHLAND (1-800-274-5263)
Product name	Pliobond™ 25 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries	
Product code	153106	
Product Use Description	No data	

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid, tan

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Potential Health Effects

Exposure routes

Inhalation, Skin absorption, 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. Symptoms may include redness and burning of skin, and other skin damage. Prolonged or repeated contact may dry the skin. Symptoms may include redness, burning, and drying and cracking of skin, skin burns, and other skin damage.

Ingestion

This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

Inhalation

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.). May cause allergic respiratory reaction.

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), blood-forming system, 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:, abnormal coloring of the skin, allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects), stomach or intestinal upset (nausea, vomiting, diarrhea), thirst, irritation (nose, throat, airways), Cough, Lung irritation, central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, sleep disturbances, 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), high blood sugar, pneumonia, 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), shock, Convulsions, respiratory failure, coma

Target Organs

This material (or a component) shortens the time of onset or worsens the liver and kidney damage induced by other chemicals., 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., Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals:, nervous system effects, blood abnormalities, kidney damage, liver damage, heart damage, lung 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

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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, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate 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

Do not induce vomiting. Phenol 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 (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. 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 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

Dry chemical, Carbon dioxide (CO2), Water spray

Hazardous combustion products

carbon dioxide and carbon monoxide, calcium oxide, 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.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 material with water used for cooling purposes.

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. Ensure adequate ventilation. Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Pay attention to the spreading of gases especially at ground level (heavier than air) and to the direction of the wind.

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

ACETONE		**67-64-1**
ACGIH	time weighted average	500 ppm
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**	
NIOSH	Recommended exposure limit (REL):	10 mg/m3	Total
NIOSH	Recommended exposure limit (REL):	5 mg/m3	Respirable.
OSHA Z1	Permissible exposure limit	5 mg/m3	Respirable fraction.
OSHA Z1	Permissible exposure limit	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

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Eye protection

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

Skin and body protection

Wear normal work clothing including long pants, long-sleeved shirts and foot covering to prevent direct contact of the product with the skin. Launder clothing before reuse. If skin irritation develops, contact your facility health and safety professional or your local safety equipment supplier to determine the proper personal protective equipment for your use.
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 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 available
Colour	tan
Odour	no data available
Boiling point/boiling range	no data available
Melting point/range	no data available
Sublimation point	no data available
pH	no data available
Flash point	-4 °F / -20 °C Seta closed cup
Ignition temperature	no data available
Evaporation rate	1 Ethyl Ether
Lower explosion limit/Upper explosion limit	no data available
Particle size	no data available

Vapour pressure	no data available
Relative vapour density	no data available
Density	0.8577 g/cm3 @ 77.00 °F / 25.00 °C 7.1534 lb/gal @ 77.00 °F / 25.00 °C
Bulk density	No data
Water solubility	no data available
Solubility(ies)	no data available
Partition coefficient: n-octanol/water	no data available
log Pow	no data available
Autoignition temperature	no data available
Viscosity, dynamic	600 mPa.s
Viscosity, kinematic	no data available
Solids in Solution	no data available
Decomposition temperature	no data available
Burning number	no data available
Dust explosion constant	no data available
Minimum ignition energy	no data available

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

excessive heat Heat, flames and sparks.

Incompatible products

1,3-butadiene, Acids, alkalis, ammonium salts, aluminum, aluminum salts, Amines, Ammonia, Copper, Copper alloys, halogenated hydrocarbons, halogens, Iron, Lead, magnesium, peroxides, Reducing agents, Strong oxidizing agents, Zinc

Hazardous decomposition products

carbon dioxide and carbon monoxide, calcium oxide, acid vapors

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: 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 LD 50 Rat: 2,020 mg/kg

Acute inhalation toxicity

ACETONE	: LC 50 Rat: > 16000 ppm; 4 h
METHYL ETHYL KETONE	: 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

Acute dermal toxicity

ACETONE	: LD 50 Rabbit: > 20,000 mg/kg
METHYL ETHYL KETONE	: 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

Biodegradability

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Bioaccumulation

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Ecotoxicity effects

Toxicity to fish

ACETONE	:	96 h static test LC 50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 4,740.00 - 6,330.00 mg/l 96 h static test LC 50 Bluegill (Lepomis macrochirus): 8,300.00 mg/l 96 h flow-through test LC 50 Fathead minnow (Pimephales promelas): 8,733.00 - 9,482.00 mg/l
METHYL ETHYL KETONE	:	96 h flow-through test LC 50 Fathead minnow (Pimephales promelas): 3,130.00 - 3,320.00 mg/l ; Mortality
CALCIUM CARBONATE	:	96 h LC 50 Gambusia affinis (Mosquito fish): > 56,000.00 mg/l Method: Static; Mortality
PHENOL	:	96 h LC 50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 7.50 - 14.00 mg/l Method: Static; Mortality 96 h LC 50 Danio rerio (zebra fish): 27.80 mg/l Method: Static; Mortality
ORTHO CRESOL	:	96 h LC 50 Fathead minnow (Pimephales promelas): 9.72 - 15.92 mg/l Method: Static; Mortality 96 h LC 50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 8.40 mg/l Method: Flow through; Mortality
FORMALDEHYDE	:	96 h LC 50 Danio rerio (zebra fish): 41.00 mg/l Method: Static; Mortality

Toxicity to daphnia and other aquatic invertebrates.

ACETONE	:	no data available
METHYL ETHYL KETONE	:	48 h static test EC 50 Water flea (Daphnia magna): 4,025.00 - 6,440.00 mg/l Intoxication
CALCIUM CARBONATE	:	no data available
PHENOL	:	48 h EC 50 Water flea (Daphnia magna): 4.24 - 10.70 mg/l Method: Static Intoxication
ORTHO CRESOL	:	48 h EC 50 Water flea (Daphnia magna): 15.80 mg/l

		Method: Static Intoxication
FORMALDEHYDE	:	48 h EC 50 Water flea (Daphnia magna): 29.00 mg/l Method: Static Intoxication

Toxicity to algae

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	72 h Duckweed (Lemna minor): 750.00 mg/l Method: Static Mortality
FORMALDEHYDE	:	no data available

Toxicity to bacteria

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Biochemical Oxygen Demand (BOD)

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available

PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Chemical Oxygen Demand (COD)

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

Additional ecological information

ACETONE	:	no data available
METHYL ETHYL KETONE	:	no data available
CALCIUM CARBONATE	:	no data available
PHENOL	:	no data available
ORTHO CRESOL	:	no data available
FORMALDEHYDE	:	no data available

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

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.
U.S. DOT - ROAD					
UN 1133	Adhesives	3		II	
U.S. DOT - RAIL					
UN 1133	Adhesives	3		II	
U.S. DOT - INLAND WATERWAYS					
UN 1133	Adhesives	3		II	
TRANSPORT CANADA - ROAD					
UN 1133	ADHESIVES	3		II	
TRANSPORT CANADA - RAIL					
UN 1133	ADHESIVES	3		II	
TRANSPORT CANADA - INLAND WATERWAYS					
UN 1133	ADHESIVES	3		II	
INTERNATIONAL MARITIME DANGEROUS GOODS					
UN 1133	ADHESIVES	3		II	
INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO					
UN 1133	Adhesives	3		II	
INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER					
UN 1133	Adhesives	3		II	
MEXICAN REGULATION FOR THE LAND TRANSPORT OF HAZARDOUS MATERIALS AND WASTES					
UN 1133	ADHESIVOS	3		II	

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Dangerous goods descriptions (if indicated above) may not reflect 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 to the State of California to cause cancer.	FORMALDEHYDE QUARTZ (SiO2) VINYLCYCLOHEXENE, 4- BENZENE ACRYLONITRILE 1,3, BUTADIENE
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	VINYLCYCLOHEXENE, 4- BENZENE 1,3, BUTADIENE

SARA Hazard Classification
Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313 Component(s)

PHENOL	1.02 %
FORMALDEHYDE	0.12 %

New Jersey RTK Label Information

ACETONE	67-64-1
SYNTHETIC RUBBER	800986-5046P
PHENOLIC RESIN	254504001-5605
METHYL ETHYL KETONE	78-93-3
CALCIUM CARBONATE	471-34-1
PHENOL	108-95-2
FORMALDEHYDE	50-00-0

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Pennsylvania RTK Label Information

ACETONE	67-64-1
SYNTHETIC RUBBER	800986-5046P
PHENOLIC RESIN	254504001-5605
METHYL ETHYL KETONE	78-93-3
CALCIUM CARBONATE	471-34-1
PHENOL	108-95-2
FORMALDEHYDE	50-00-0

Notification status

US. Toxic Substances Control Act	y (positive listing)
Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL). (Can. Gaz. Part II, Vol. 133)	y (positive listing)
Australia. Industrial Chemical (Notification and Assessment) Act	y (positive listing)
New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand	n (Negative listing)
Japan. Kashin-Hou Law List	n (Negative listing)
Korea. Toxic Chemical Control Law (TCCL) List	y (positive listing)
Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act	y (positive listing)
China. Inventory of Existing Chemical Substances	y (positive listing)

Reportable quantity - Product

US. EPA CERCLA Hazardous Substances (40 CFR 302) 6967 lbs

Reportable quantity-Components

ACETONE 67-64-1 5000 lbs

	HMIS	NFPA
Health	3*	3
Flammability	3	3
Physical hazards	2	
Instability		2
Specific Hazard	--	--

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).