

<b>ASHLAND®</b>		Page: 1
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

29 CFR 1910.1200 (OSHA HazCom 2012)

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

### Product identifier

Trade name : Pliobond™ 30 (ADHESIVES F-2 )  
ADHESIVE  
™ Trademark, Ashland or its subsidiaries, registered in  
various countries

### Recommended use of the chemical and restrictions on use

Use of the Substance/Mixture : Adhesives

Company name of supplier : HISAKA WORKS, LTD.

Address : 2-1-48, HIGASHI-KONOIKECHO HIGASHI-OSAKA CITY

OSAKA 578-0972, JAPAN

Telephone : +81-72-966-9606

Emergency telephone number : +81-72-966-9606

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Flammable liquids : Category 2

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitization : Category 1

Carcinogenicity : Category 1B

Specific target organ  
systemic toxicity - single  
exposure : Category 3 (Central nervous system)

Specific target organ  
systemic toxicity - repeated  
exposure : Category 2 (Skin, Nervous system, Liver, Kidney)

### GHS Label element

<b>ASHLAND®</b>		
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

Hazard pictograms

:



Signal Word

: Danger

Hazard Statements

: Highly flammable liquid and vapor.  
 Causes skin irritation.  
 May cause an allergic skin reaction.  
 Causes serious eye irritation.  
 May cause drowsiness or dizziness.  
 May cause cancer.  
 May cause damage to organs (Skin, Nervous system, Liver, Kidney) through prolonged or repeated exposure.

Precautionary Statements

: **Prevention:**  
 Obtain special instructions before use.  
 Do not handle until all safety precautions have been read and understood.  
 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
 Keep container tightly closed.  
 Ground/bond container and receiving equipment.  
 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
 Use only non-sparking tools.  
 Take precautionary measures against static discharge.  
 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
 Wash skin thoroughly after handling.  
 Use only outdoors or in a well-ventilated area.  
 Contaminated work clothing must not be allowed out of the workplace.  
 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 IF exposed or concerned: Get medical advice/ attention.  
 If skin irritation or rash occurs: Get medical advice/ attention.  
 If eye irritation persists: Get medical advice/ attention.  
 Take off contaminated clothing and wash before reuse.  
 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
**Storage:**  
 Store in a well-ventilated place. Keep container tightly closed.  
 Store in a well-ventilated place. Keep cool.  
 Store locked up.

<b>ASHLAND®</b>		
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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

Substance / Mixture : Mixture

Chemical nature : Defatter

**Hazardous components**

Chemical Name	CAS-No.	Classification	Concentration (%)
METHYL ETHYL KETONE	78-93-3	Flam. Liq. 2; H225 Eye Irrit. 2A; H319 STOT SE 3; H336	67.28
CALCIUM CARBONATE	471-34-1		3.85
PHENOL	108-95-2	Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 Skin Corr. 1; H314 Eye Dam. 1; H318 STOT RE 2; H373	1.55
FORMALDEHYDE	50-00-0	Flam. Liq. 4; H227 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 Skin Corr. 1B; H314	0.19

<b>ASHLAND®</b>		Page: 4
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

		Eye Dam. 1; H318 Skin Sens. 1; H317 Carc. 1B; H350	
BENZOTHIAZYL DISULFIDE	120-78-5	Skin Sens. 1; H317	0.12

#### SECTION 4. FIRST AID MEASURES

General advice	: Move out of dangerous area. Call a POISON CENTRE or doctor/physician if exposed or you feel unwell. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	: Move to fresh air. If unconscious place in recovery position and seek medical advice. Consult a physician after significant exposure.
In case of skin contact	: Remove contaminated clothing. If irritation develops, get medical attention. If on skin, rinse well with water. Wash contaminated clothing before re-use. If on clothes, remove clothes.
In case of eye contact	: Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye.
If swallowed	: Obtain medical attention. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. 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.
Most important symptoms	: Ingestion of large amounts or other significant exposure to this

<b>ASHLAND®</b>		Page: 5
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

and effects, both acute and delayed

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.  
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)  
Cough  
low body temperature  
irregular heartbeat  
cyanosis (causes blue coloring of the skin and nails from lack of oxygen)  
lung edema (fluid buildup in the lung tissue)  
Convulsions  
respiratory failure  
Difficulty in breathing  
Causes skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.  
May cause cancer.  
May cause damage to organs through prolonged or repeated exposure.

Notes to physician

: 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.

## SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Water spray  
Foam

<b>ASHLAND®</b>		Page: 6
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : carbon dioxide and carbon monoxide  
Hydrogen cyanide (hydrocyanic acid)  
nitrogen oxides (NO<sub>x</sub>)  
calcium oxide  
acid vapors
- Specific extinguishing methods :
- Product is compatible with standard fire-fighting agents.
- Further information : Do not use a solid water stream as it may scatter and spread fire.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Remove all sources of ignition.  
Use personal protective equipment.  
Ensure adequate ventilation.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for : Contain spillage, and then collect with non-combustible

<b>ASHLAND®</b>		Page: 7
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

containment and cleaning up      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.

## SECTION 7. HANDLING AND STORAGE

Advice on safe handling      : Open drum carefully as content may be under pressure. Avoid formation of aerosol. Provide sufficient air exchange and/or exhaust in work rooms. Do not breathe vapours/dust. Do not smoke. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Container hazardous when empty. Take precautionary measures against static discharges. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Dispose of rinse water in accordance with local and national regulations. Container may be opened only under exhaust ventilation hood.

Conditions for safe storage      : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. No smoking. Electrical installations / working materials must comply with the technological safety standards.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis

<b>ASHLAND®</b>		
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

METHYL ETHYL KETONE	78-93-3	TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH
		REL	200 ppm 590 mg/m3	NIOSH/GUID E
		STEL	300 ppm 885 mg/m3	NIOSH/GUID E
		PEL	200 ppm 590 mg/m3	OSHA_TRA NS
CALCIUM CARBONATE	471-34-1	PEL	5 mg/m3 Respirable fraction.	OSHA_TRA NS
		PEL	15 mg/m3 Total dust.	OSHA_TRA NS
		REL	5 mg/m3 Respirable.	NIOSH/GUID E
		REL	10 mg/m3 Total	NIOSH/GUID E
PHENOL	108-95-2	TWA	5 ppm	ACGIH
		REL	5 ppm 19 mg/m3	NIOSH/GUID E
		Ceil_Time	15.6 ppm 60 mg/m3	NIOSH/GUID E
		PEL	5 ppm 19 mg/m3	OSHA_TRA NS
		TWA	5 ppm 19 mg/m3	TN OEL
FORMALDEHYDE	50-00-0	Ceiling	0.3 ppm	ACGIH
		REL	0.016 ppm	NIOSH/GUID E
		Ceil_Time	0.1 ppm	NIOSH/GUID E
		TWA	0.75 ppm	OSHASP
		STEL	2 ppm	OSHASP
		OSHA_ACT	0.5 ppm	OSHASP
		Ceiling	0.3 ppm	ACGIHLIS_P

**Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
METHYL ETHYL KETONE	78-93-3	methylEthyl Ketone	Urine	Sampling time: End of shift.	2 mg/l	ACGIH BEI
Remarks:	Nonspecific					
PHENOL	108-95-2	Phenol with hydrolysis	Creatinine in urine	Sampling time: End of shift.	250 mg/g	
Remarks:	Background, Nonspecific					

**Engineering measures** : Provide sufficient mechanical (general and/or local exhaust)



<b>ASHLAND®</b>		Page: 9
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

### Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

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.

Hand protection

Material : natural rubber

Remarks

: Nitrile rubber  
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection

: Wear chemical splash goggles when there is the potential for exposure of the eyes to liquid, vapor or mist.

Skin and body protection

: Wear as appropriate:  
impervious clothing  
Safety shoes  
Flame-resistant clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.  
Discard gloves that show tears, pinholes, or signs of wear.  
Wear resistant gloves (consult your safety equipment supplier).

Hygiene measures

: Wash hands before breaks and at the end of workday.  
When using do not eat or drink.  
When using do not smoke.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : viscous

Physical state : liquid

Colour : tan

<b>ASHLAND®</b>		Page: 10
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

Odour	: No data available
Odour Threshold	: No data available
pH	: No data available
	: No data available
Boiling point/boiling range	: 174.9 °F / 79.4 °C (1013 hPa)
Flash point	: 21 °F / -6 °C Method: Seta closed cup
Evaporation rate	: < 1 Ethyl Ether
Flammability (solid, gas)	: No data available
Upper explosion limit	: 12.0 %(V)
Lower explosion limit	: 2.0 %(V)
Vapour pressure	: ca. 121 hPa (25 °C)
Relative vapour density	: > 1(Air = 1.0)
Relative density	: 0.894 (25 °C)
Density	: 0.894 g/cm <sup>3</sup> (25 °C)
Solubility(ies)	
Water solubility	: slightly soluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Thermal decomposition	: No data available
Viscosity	
Viscosity, dynamic	: ca. 7,000 mPa.s (25 °C)
Viscosity, kinematic	: No data available
Oxidizing properties	: No data available

<b>ASHLAND®</b>		Page: 11
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

## SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No decomposition if stored and applied as directed.
Chemical stability	: Stable under recommended storage conditions.
Possibility of hazardous reactions	: Vapours may form explosive mixture with air. 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.
Conditions to avoid	: Heat, flames and sparks.  excessive heat
Incompatible materials	: 1,3-butadiene ammonium salts aluminum aluminum salts Amines Copper Copper alloys halogenated hydrocarbons halogens Iron Lead magnesium strong alkalis strong mineral acids Strong oxidizing agents Zinc
Hazardous decomposition products	acid vapors calcium oxide carbon dioxide and carbon monoxide

## SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure	: Inhalation Skin contact Eye Contact Ingestion
--	--

<b>ASHLAND®</b>		Page: 12
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**Acute toxicity**

Not classified based on available information.

**Components:****METHYL ETHYL KETONE:**

Acute oral toxicity : LD 50 (Rat): 2,300 - 3,500 mg/kg

Acute dermal toxicity : LD 50 (Rabbit): &gt; 5 g/kg

**CALCIUM CARBONATE:**

Acute oral toxicity : LD 50 (Rat): 6,450 mg/kg

Acute inhalation toxicity : LC 50 (Rat): > 3 mg/l  
 Exposure time: 4 h  
 Method: OECD Test Guideline 403  
 Assessment: Not classified as acutely toxic by inhalation  
 under GHS.  
 Remarks: Aerosol

Acute dermal toxicity : LD 50 (Rat): > 2,000 mg/kg  
 Method: OECD Test Guideline 402

**PHENOL:**

Acute oral toxicity : LD 50 (Rat): 317 mg/kg  
  
 LD 50 (Mouse): 270 mg/kg  
 Assessment: The component/mixture is classified as acute  
 oral toxicity, category 3.

Acute inhalation toxicity : Assessment: The component/mixture is classified as acute  
 inhalation toxicity, category 3.

Acute dermal toxicity : LD 50 (Rabbit): 850 mg/kg  
  
 LD50 (Rat, females): 660 mg/kg  
 Method: OECD Test Guideline 402

**FORMALDEHYDE:**

Acute oral toxicity : LD 50 (Guinea pig): 260 mg/kg  
  
 LD 50 (Rat): 100 mg/kg  
  
 LD 50 (Rat, Male): 800 mg/kg  
 Assessment: The component/mixture is classified as acute  
 oral toxicity, category 3.

Acute inhalation toxicity : LC 50 (Rat): 588 mg/m3  
 Exposure time: 4 h  
 Test atmosphere: gas  
 Assessment: The component/mixture is classified as acute  
 inhalation toxicity, category 3.

Acute dermal toxicity : LD 50 (Rabbit): 288 mg/kg

<b>ASHLAND®</b>		Page: 13
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**BENZOTHIAZYL DISULFIDE:**

Acute oral toxicity : LD 50 (Rat): &gt; 12 g/kg

Acute dermal toxicity : LD 50 (Rabbit): &gt; 7,940 mg/kg

**Skin corrosion/irritation**

Causes skin irritation.

**Product:**

Result: Repeated exposure may cause skin dryness or cracking.

Remarks: May cause skin irritation and/or dermatitis.

**Components:****METHYL ETHYL KETONE:**

Result: Not irritating to skin

**CALCIUM CARBONATE:**

Result: Not irritating to skin

**PHENOL:**

Result: Corrosive to skin

**FORMALDEHYDE:**

Result: Causes burns.

**BENZOTHIAZYL DISULFIDE:**

Result: Mildly irritating to skin

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Product:**

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin., Causes serious eye irritation.

**Components:****METHYL ETHYL KETONE:**

Result: Irritating to eyes

**CALCIUM CARBONATE:**

Result: Not irritating to eyes

**PHENOL:**

Result: Corrosive to eyes

**FORMALDEHYDE:**


Result: Corrosive to eyes

**BENZOTHIAZYL DISULFIDE:**

Result: Mildly irritating to eyes

**Respiratory or skin sensitisation**

Skin sensitisation: May cause an allergic skin reaction.

		Page: 14
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

Respiratory sensitisation: Not classified based on available information.

**Components:**

**FORMALDEHYDE:**

Result: Does not cause respiratory sensitisation.

Result: May cause sensitisation by skin contact.

**BENZOTHAZYL DISULFIDE:**

Assessment: May cause sensitization by skin contact.

**Germ cell mutagenicity**

Not classified based on available information.

**Components:**

**PHENOL:**

Genotoxicity in vitro

- : Test Type: Chromosome aberration test in vitro  
Test species: Chinese hamster ovary cells  
Metabolic activation: with metabolic activation  
Method: OECD Test Guideline 473  
Result: positive
- : Test Type: Micronucleus test  
Test species: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 487  
Result: positive

Genotoxicity in vivo

- : Test Type: Micronucleus test  
Test species: Mouse (male and female)  
Application Route: Intraperitoneal injection  
Method: OECD Test Guideline 474  
Result: positive

**FORMALDEHYDE:**

Genotoxicity in vitro

- : Test Type: Ames test  
Test species: Salmonella typhimurium  
Metabolic activation: without metabolic activation  
Result: positive
- : Test Type: Chromosome aberration test in vitro  
Test species: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Result: positive
- : Test Type: In vitro mammalian cell gene mutation test  
Test species: Chinese hamster fibroblasts  
Metabolic activation: with and without metabolic activation  
Result: negative
- : Test Type: in vitro assay  
Test species: Human lymphocytes  
Metabolic activation: with and without metabolic activation  
Result: Conflicting results have been seen in different studies.

<b>ASHLAND®</b>		Page: 15
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**Genotoxicity in vivo**

: Test Type: Micronucleus test

Test species: Mouse

Application Route: Oral

Result: negative

Test Type: Micronucleus test

Test species: Mouse

Application Route: inhalation (gas)

Result: negative

Test Type: in vivo assay

Test species: Rat

Application Route: inhalation (gas)

Result: negative

Test Type: Mouse specific locus test

Test species: Mouse

Application Route: inhalation (gas)

Result: negative

Test Type: Mammalian bone marrow sister chromatid  
exchange

Test species: Rat

Application Route: inhalation (gas)

Result: negative

Test Type: comet assay

Test species: Rat

Application Route: inhalation (gas)

Result: negative

**Carcinogenicity**

May cause cancer.

**Components:**

FORMALDEHYDE:

Species: Rat

Application Route: Ingestion

Result: negative

Species: Mouse

Application Route: Dermal

Result: negative

Species: Rat

Application Route: Inhalation

Result: positive

Carcinogenicity -  
Assessment

: Presumed to have carcinogenic potential for humans

**Reproductive toxicity**

Not classified based on available information.

**Components:**

<b>ASHLAND®</b>		Page: 16
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**FORMALDEHYDE:**

Effects on fertility : Remarks: No data available

Effects on foetal development : Species: Rat  
Result: No teratogenic effects**STOT - single exposure**

May cause drowsiness or dizziness.

**Components:****METHYL ETHYL KETONE:**

Assessment: May cause drowsiness or dizziness.

**STOT - repeated exposure**

May cause damage to organs (Skin, Nervous system, Liver, Kidney) through prolonged or repeated exposure.

**Components:****PHENOL:**

Target Organs: Skin

Assessment: May cause damage to organs through prolonged or repeated exposure.

Target Organs: Nervous system

Assessment: May cause damage to organs through prolonged or repeated exposure.

Target Organs: Liver

Assessment: May cause damage to organs through prolonged or repeated exposure.

Target Organs: Kidney

Assessment: May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****FORMALDEHYDE:**

Species: Rat

No observed adverse effect level: 82 mg/kg

Application Route: Ingestion

Species: Rat

No observed adverse effect level: 1.2 mg/m3

Application Route: inhalation (gas)

Target Organs: Nose, Upper respiratory tract

**Aspiration toxicity**

Not classified based on available information.

**Product:**

No aspiration toxicity classification

**Components:****METHYL ETHYL KETONE:**

May be harmful if swallowed and enters airways.

**Further information****Product:**

Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and



<b>ASHLAND®</b>		Page: 17
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

vomiting., Concentrations substantially above the TLV value may cause narcotic effects.,  
Solvents may degrease the skin.

**Components:**

METHYL ETHYL KETONE:

Remarks: Central nervous system

PHENOL:

Remarks: Central nervous system

Remarks: Blood

**Carcinogenicity:**

**IARC**

Group 1: Carcinogenic to humans

FORMALDEHYDE 50-00-0

**OSHA**

OSHA specifically regulated carcinogen

FORMALDEHYDE 50-00-0

**NTP**

Known to be human carcinogen

FORMALDEHYDE 50-00-0

---

## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

**Components:**

METHYL ETHYL KETONE:

Toxicity to fish : LC 50 (Fathead minnow (*Pimephales promelas*)): 3,130 - 3,320 mg/l  
Exposure time: 96 h  
Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (*Daphnia magna*)): 4,025 - 6,440 mg/l  
Exposure time: 48 h  
Test Type: static test  
Remarks: Intoxication

CALCIUM CARBONATE:

Toxicity to fish : LC 50 (*Gambusia affinis* (Mosquito fish)): > 56,000 mg/l  
Exposure time: 96 h  
Test Type: static test

PHENOL:

Toxicity to fish : LC 50 (*Oncorhynchus mykiss* (rainbow trout)): 7.5 - 14 mg/l  
Exposure time: 96 h

<b>ASHLAND®</b>		Page: 18
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

Test Type: static test

LC 50 (Fathead minnow (*Pimephales promelas*)): 67.5 mg/l

Exposure time: 96 h

Test Type: flow-through test

LC 50 (Danio rerio (zebra fish)): 27.8 mg/l

Exposure time: 96 h

Method: Static

Remarks: Mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Water flea (*Ceriodaphnia dubia*)): 3.1 mg/l  
Exposure time: 48 h  
Test Type: static test

Toxicity to algae : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 61.1 mg/l  
Exposure time: 96 h  
Test Type: static test

Toxicity to fish (Chronic toxicity) : NOEC (Fish): 0.077 mg/l  
Exposure time: 60 d  
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Water flea (*Daphnia magna*)): 0.16 mg/l  
Exposure time: 16 d  
Test Type: semi-static test

#### FORMALDEHYDE:

Toxicity to fish : LC 50 (Danio rerio (zebra fish)): 41 mg/l  
Exposure time: 96 h  
Method: Static  
Remarks: Mortality

LC 50 (Striped bass (*Morone saxatilis*)): 6.7 mg/l  
Exposure time: 96 h  
Method: Static

Toxicity to daphnia and other aquatic invertebrates : EC 50 (Water flea (*Daphnia magna*)): 29 mg/l  
Exposure time: 48 h  
Method: Static  
Remarks: Intoxication

EC 50 (Water flea (*Daphnia pulex*)): 5.8 mg/l  
Exposure time: 48 h

Toxicity to algae : ErC50 (*Desmodesmus subspicatus*): 4.89 mg/l  
Exposure time: 72 h

Toxicity to bacteria : EC 50 (activated sludge): 19 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition

<b>ASHLAND®</b>		Page: 19
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**Persistence and degradability****Components:****PHENOL:**

Biodegradability : Result: Readily biodegradable  
 Biodegradation: 62 %  
 Exposure time: 100 h  
 Method: OECD Test Guideline 301C

**FORMALDEHYDE:**

Biodegradability : aerobic  
 Result: Readily biodegradable  
 Biodegradation: 90 %  
 Exposure time: 28 d  
 Method: OECD Test Guideline 301D

aerobic  
 Result: Readily biodegradable  
 Biodegradation: > 90 %  
 Exposure time: 2 Weeks  
 Method: OECD Test Guideline 301C

Photodegradation :

**Bioaccumulative potential****Components:****METHYL ETHYL KETONE:**

Partition coefficient: n-octanol/water : log Pow: 0.29

**PHENOL:**

Partition coefficient: n-octanol/water : log Pow: 1.46

**FORMALDEHYDE:**

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Partition coefficient: n-octanol/water : log Pow: 0.35 (25 °C)

**Mobility in soil****Components:**

No data available

**Other adverse effects****Product:**

Additional ecological information : No data available

<b>ASHLAND®</b>		Page: 20
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**Components:****FORMALDEHYDE:**Results of PBT and vPvB  
assessment: This substance is not considered to be persistent,  
bioaccumulating and toxic (PBT). This substance is not  
considered to be very persistent and very bioaccumulating  
(vPvB).**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

General advice

: Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with  
chemical or used container.  
Send to a licensed waste management company.  
  
Dispose of in accordance with all applicable local, state and  
federal regulations.

Contaminated packaging

: Empty remaining contents.  
Dispose of as unused product.  
Empty containers should be taken to an approved waste  
handling site for recycling or disposal.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.**SECTION 14. TRANSPORT INFORMATION****International transport regulations****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	
----	------	-----------	---	----	--

<b>ASHLAND®</b>		Page: 21
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

**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

Marine pollutant	no
------------------	----

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.

**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know Act****CERCLA Reportable Quantity**

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
METHYL ETHYL KETONE	78-93-3	5000	7431.441239

**SARA 311/312 Hazards** : Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard

**SARA 313 Component(s)**

<b>ASHLAND®</b>		Page: 22
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

PHENOL 108-95-2 1.55 %

FORMALDEHYDE 50-00-0 0.19 %

#### California Prop 65

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

FORMALDEHYDE 50-00-0

VINYLCYCLOHEXENE, 4- 100-40-3

ACRYLONITRILE 107-13-1

1,3, BUTADIENE 106-99-0

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

VINYLCYCLOHEXENE, 4- 100-40-3

1,3, BUTADIENE 106-99-0

#### The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL.

AUSTR : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECL : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

#### Inventories

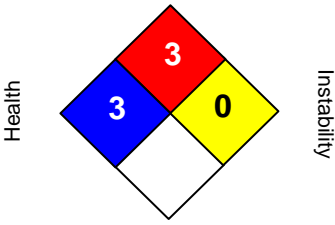
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TSCA (USA)

<b>ASHLAND®</b>		Page: 23
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

## SECTION 16. OTHER INFORMATION

### Further information

Revision Date: 05/25/2015

NFPA:	HMIS III:						
<p>Flammability</p> <p>Health</p> <p>Instability</p> <p>Special hazard.</p> 	<table border="1"> <tr> <td><b>HEALTH</b></td><td><b>2*</b></td></tr> <tr> <td><b>FLAMMABILITY</b></td><td><b>3</b></td></tr> <tr> <td><b>PHYSICAL HAZARD</b></td><td><b>0</b></td></tr> </table> <p>0 = not significant, 1 = Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic</p>	<b>HEALTH</b>	<b>2*</b>	<b>FLAMMABILITY</b>	<b>3</b>	<b>PHYSICAL HAZARD</b>	<b>0</b>
<b>HEALTH</b>	<b>2*</b>						
<b>FLAMMABILITY</b>	<b>3</b>						
<b>PHYSICAL HAZARD</b>	<b>0</b>						

### NFPA Flammable and Combustible Liquids Classification

Flammable Liquid Class IB

### Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H227	Combustible liquid.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H336	May cause drowsiness or dizziness.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.

Sources of key data used to compile the Safety Data Sheet

Ashland internal data including own and sponsored test reports

The UNECE administers regional agreements implementing harmonised classification for labelling (GHS) and transport.

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 SDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

<b>ASHLAND®</b>		Page: 24
<b>SAFETY DATA SHEET</b>		Revision Date: 05/25/2015
		Print Date: 6/2/2015
		SDS Number: R0171290
Pliobond™ 30 ADHESIVE ™ Trademark, Ashland or its subsidiaries, registered in various countries 120274		Version: 1.1

List of abbreviations and acronyms that could be, but not necessarily are, used in this safety data sheet :

ACGIH : American Conference of Industrial Hygienists  
 BEI : Biological Exposure Index  
 CAS : Chemical Abstracts Service (Division of the American Chemical Society).  
 CMR : Carcinogenic, Mutagenic or Toxic for Reproduction  
 FG : Food grade  
 GHS : Globally Harmonized System of Classification and Labeling of Chemicals.  
 H-statement : Hazard Statement  
 IATA : International Air Transport Association.  
 IATA-DGR : Dangerous Goods Regulation by the "International Air Transport Association" (IATA).

ICAO : International Civil Aviation Organization  
 ICAO-TI (ICAO) : Technical Instructions by the "International Civil Aviation Organization"  
 IMDG : International Maritime Code for Dangerous Goods  
 ISO : International Organization for Standardization  
 logPow : octanol-water partition coefficient  
 LCxx : Lethal Concentration, for xx percent of test population  
 LDxx : Lethal Dose, for xx percent of test population.  
 ICxx : Inhibitory Concentration for xx of a substance  
 Ecxx : Effective Concentration of xx  
 N.O.S.: Not Otherwise Specified  
 OECD : Organization for Economic Co-operation and Development  
 OEL : Occupational Exposure Limit  
 P-Statement : Precautionary Statement  
 PBT : Persistent , Bioaccumulative and Toxic  
 PPE : Personal Protective Equipment  
 STEL : Short-term exposure limit  
 STOT : Specific Target Organ Toxicity  
 TLV : Threshold Limit Value  
 TWA : Time-weighted average  
 vPvB : Very Persistent and Very Bioaccumulative  
 WEL : Workplace Exposure Level

CERCLA : Comprehensive Environmental Response, Compensation, and Liability Act  
 DOT : Department of Transportation  
 FIFRA : Federal Insecticide, Fungicide, and Rodenticide Act  
 HMIRC : Hazardous Materials Information Review Commission  
 HMIS : Hazardous Materials Identification System  
 NFPA : National Fire Protection Association  
 NIOSH : National Institute for Occupational Safety and Health  
 OSHA : Occupational Safety and Health Administration  
 PMRA : Health Canada Pest Management Regulatory Agency  
 RTK : Right to Know  
 WHMIS : Workplace Hazardous Materials Information System