SAFETY DATA SHEET		Revision Date: 08/29/2019
		Print Date: 8/29/2019
		SDS Number: R0257484
Pliogrip™ 6637 PRIMER ™ Trademark, Ashland or its subsidiaries, registered in various countries 149746		Version: 0.0

29 CFR 1910.1200 (OSHA HazCom 2012)

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

Trade name : Pliogrip™ 6637 PRIMER
™ Trademark, Ashland or its subsidiaries, registered in various countries

Relevant identified uses of the substance or mixture and uses advised against

Recommended use : Adhesives

Details of the supplier of the safety data sheet Ashland P.O. Box 2219 Columbus, OH 43216 United States of America (USA) +1-614-790-3333 EHSProductSafety@ashland.com	**Emergency telephone number** 1-800-ASHLAND (1-800-274-5263) **Regulatory Information Number** 1-614-790-3333 **Product Information** +1-614-790-3333

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids	:	Category 3
Skin irritation	:	Category 2
Eye irritation	:	Category 2A
Respiratory sensitization	:	Category 1
Skin sensitization	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system, Central nervous system)
Specific target organ toxicity - repeated exposure (Inhalation)	:	Category 2 (Respiratory system, Respiratory Tract)

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : Flammable liquid and vapor.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May cause damage to organs (Respiratory system, Respiratory Tract) through prolonged or repeated exposure if inhaled.

Precautionary Statements : **Prevention:**
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/ eye protection/ face protection.
In case of inadequate ventilation wear respiratory 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/doctor 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 skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.
If experiencing respiratory symptoms: Call a POISON

CENTER/doctor.
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.

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 (%)
POLYOL	254504001-5568	This material is not considered hazardous under the OSHA Hazard Communication Standard (HazCom 2012).	>= 10.00 - < 15.00

The identity and concentration of one or more component(s) is being withheld under business confidentiality.

N-BUTYL ACETATE	123-86-4	Flam. Liq. 2; H225 STOT SE 3; H336	75.957
POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1; H334	12.00

		Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	Comb Dust Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335 STOT RE 2; H373	4.20
METHYLENE DIPHENYLISOCYANATE	26447-40-5	Acute Tox. 4; H332 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Resp. Sens. 1A; H334 Skin Sens. 1A; H317 STOT SE 3; H335 STOT RE 2; H373	1.20

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. Call a physician or poison control centre immediately. Keep patient warm and at rest. If unconscious, place in recovery position and seek medical advice.
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.
Most important symptoms and effects, both acute and delayed	:	No symptoms known or expected. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure if inhaled.
Notes to physician	:	No hazards which require special first aid measures.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray Foam Alcohol-resistant foam Carbon dioxide (CO2) 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) Isocyanates Hydrocarbons Nitrogen oxides (NOx)
Specific extinguishing methods	:	Product is compatible with standard fire-fighting agents.
Further information	:	Product is compatible with standard fire-fighting agents. 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. 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 containment and 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.

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.

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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
POLYOL	254504001-5568	TWA	10 mg/m3 aerosol	US WEEL
The identity and concentration of one or more component(s) is being withheld under business confidentiality.				
N-BUTYL ACETATE	123-86-4	TWA	150 ppm 710 mg/m3	NIOSH REL
		ST	200 ppm 950 mg/m3	NIOSH REL
		TWA	150 ppm 710 mg/m3	OSHA Z-1

		TWA	150 ppm 710 mg/m3	OSHA P0
		STEL	200 ppm 950 mg/m3	OSHA P0
		PEL	150 ppm 710 mg/m3	CAL PEL
		STEL	200 ppm 950 mg/m3	CAL PEL
		TWA	50 ppm	ACGIH
		STEL	150 ppm	ACGIH
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	TWA	0.005 ppm	ACGIH

Hazardous components without workplace control parameters

Components	CAS-No.
POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9
METHYLENE DIPHENYLISOCYANATE	26447-40-5

Engineering measures : 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.

Personal protective equipment

Respiratory protection : In the case of vapour formation use a respirator with an approved filter within the capabilities of the respirator/filter combination.
Where concentrations are above recommended limits or are unknown, or a cartridge type respirator is not adequate, wear a positive-pressure supplied-air respirator.

Hand protection
- Material : butyl-rubber
- Break through time : 480 min
- Glove thickness : > 0.5 mm
- Remarks : The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

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

Physical state	:	liquid
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	258.10 °F / 125.61 °C (1,013.333333 hPa) Calculated Phase Transition Liquid/Gas
Flash point	:	26 °C
Evaporation rate	:	1 Ethyl Ether = 1
Flammability (solid, gas)	:	No data available
Upper explosion limit	:	7.6 %(V) Calculated Explosive Limit
Lower explosion limit	:	1.7 %(V) Calculated Explosive Limit
Vapour pressure	:	11.2 hPa (20 °C) Calculated Vapor Pressure
Relative vapour density	:	> 1(Air = 1.0)
Relative density	:	0.927 (77.00 °F)
Density	:	0.927 g/cm3 (77.0 °F)
Solubility(ies)		
Water solubility	:	No data available
Solubility in other solvents	:	No data available
Partition coefficient: n-	:	No data available

octanol/water
Thermal decomposition : No data available

Viscosity
Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Oxidizing properties : No data available

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.
Conditions to avoid : temperatures above 350 degrees F (177 degrees C)
Freezing temperatures.
Exposure to moisture
Heat, flames and sparks.
Incompatible materials : Acids
Alcohols
alkenes
aluminum
Amines
Ammonia
Bases
Copper alloys
Iron
isocyanates
nitrates
organic absorbents such as sawdust, peat moss, ground corn cobs, etc.
strong alkalis
Strong oxidizing agents
strong reducing agents
water
Zinc
Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of : Inhalation

exposure — Skin contact
Eye Contact
Ingestion

Acute toxicity
Not classified based on available information.

Product:

Acute inhalation toxicity : Remarks: Breathing air containing n-butyl acetate, which results from its use in aerosol applications, may cause delayed lung injury.

Components:
POLYOL**:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Assessment: Not classified as acutely toxic by ingestion under GHS.

Acute dermal toxicity : LD50 (Rabbit): > 3,000 mg/kg
Assessment: Not classified as acutely toxic by dermal absorption under GHS.

Components:
N-BUTYL ACETATE**:**

Acute oral toxicity : LD50 (Rat, female): 10.8 g/kg
Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat): > 21 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes
Assessment: No adverse effect has been observed in acute inhalation toxicity tests.

Acute dermal toxicity : LD50 (Rabbit): > 14,112 mg/kg
Method: OECD Test Guideline 402

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**

Acute oral toxicity : LD50 (Rat): > 10,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.24 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**

Acute oral toxicity : LD50 (Rat): 9,200 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.369 mg/l
Exposure time: 4 h

LC50 (Rat): > 2.24 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 7,900 mg/kg

METHYLENE DIPHENYLISOCYANATE**:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 425
GLP: yes
Remarks: Information given is based on data obtained from similar substances.

Acute inhalation toxicity : Assessment: The component/mixture is classified as acute inhalation toxicity, category 4.

Acute dermal toxicity : LD50 (Rabbit): > 9,400 mg/kg
Remarks: Information given is based on data obtained from similar substances.

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:
POLYOL**:**
Result: Slight, transient irritation

Components:
N-BUTYL ACETATE**:**

Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Result: Repeated exposure may cause skin dryness or cracking.

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**
Result: Irritating to skin.

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**
Result: Irritating to skin.

METHYLENE DIPHENYLISOCYANATE**:**
Result: Irritating to skin.
Remarks: Information given is based on data obtained from similar substances.

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:
POLYOL**:**
Result: Slight, transient irritation

Components:
N-BUTYL ACETATE**:**
Species: Rabbit
Result: Slight, transient irritation
Method: OECD Test Guideline 405

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**
Result: Irritating to eyes.

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**
Result: Irritating to eyes.

METHYLENE DIPHENYLISOCYANATE**:**
Result: No eye irritation
Remarks: Information given is based on data obtained from similar substances.

Result: Irritating to eyes.

Respiratory or skin sensitisation
Skin sensitisation: May cause an allergic skin reaction.
Respiratory sensitisation: May cause allergy or asthma symptoms or breathing difficulties if

inhaled.

Components:

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**

Assessment: May cause sensitisation by skin contact.

Assessment: May cause sensitisation by inhalation.

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**

Assessment: May cause sensitisation by inhalation.

Assessment: May cause sensitisation by skin contact.

METHYLENE DIPHENYLISOCYANATE**:**

Test Type: Maximisation Test
Species: Guinea pig
Assessment: May cause sensitisation by skin contact.
Result: The product is a skin sensitiser, sub-category 1A.

Assessment: May cause sensitisation by inhalation.
Result: The product is a respiratory sensitiser, sub-category 1A.

Germ cell mutagenicity

Not classified based on available information.

Components:

N-BUTYL ACETATE**:**

Genotoxicity in vitro : Test Type: Ames test
Test species: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Test species: Mouse
Cell type: Bone marrow
Method: OECD Test Guideline 474
Result: negative

METHYLENE DIPHENYLISOCYANATE**:**

Genotoxicity in vitro : Test Type: Ames test
Result: negative
Remarks: Information given is based on data obtained from similar substances.

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Test species: Rat

Method: OECD Test Guideline 474
Remarks: Information given is based on data obtained from similar substances.

Carcinogenicity
Not classified based on available information.
Product:
Carcinogenicity - Assessment : Methylene bisphenylisocyanate (MDI) aerosol has been reported to be irritating to lungs at a concentration of 1 mg/m3 with no effect observed at 0.2 mg/m3. Although MDI has been reported to cause an increase in non-carcinogenic lung tumors and a single carcinogenic lung tumor at very high concentrations (6 mg/m3), it is not classified as a carcinogen by IARC, NTP or OSHA.

Reproductive toxicity
Not classified based on available information.
STOT - single exposure
May cause respiratory irritation.
May cause drowsiness or dizziness.
Components:
N-BUTYL ACETATE**:**
Target Organs: Central nervous system
Assessment: May cause drowsiness or dizziness.

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause respiratory irritation.

METHYLENE DIPHENYLISOCYANATE**:**
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

STOT - repeated exposure
May cause damage to organs (Respiratory system, Respiratory Tract) through prolonged or repeated exposure if inhaled.
Components:
POLYMETHYLENE POLYPHENYL ISOCYANATE**:**
Exposure routes: Inhalation
Target Organs: Respiratory system

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

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**
Exposure routes: Inhalation
Target Organs: Respiratory system
Assessment: May cause damage to organs through prolonged or repeated exposure.

METHYLENE DIPHENYLISOCYANATE**:**
Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause damage to organs through prolonged or repeated exposure.

Aspiration toxicity
Not classified based on available information.
Further information
Product:
Remarks: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting., Concentrations substantially above the TLV value may cause narcotic effects., Solvents may degrease the skin.

Carcinogenicity:

IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Product:
Ecotoxicology Assessment

Short-term (acute) aquatic hazard	:	Acute aquatic toxicity Category 3; Harmful to aquatic life.
Long-term (chronic) aquatic hazard	:	Not classified based on available information.

Components:
POLYOL**:**

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 1,700 mg/l Exposure time: 96 h

Method: static test
Remarks: mortality

LC50 (Menidia beryllina (Silverside)): 650 mg/l
Exposure time: 96 h
Method: static test
Remarks: mortality

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

N-BUTYL ACETATE**:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 18 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 44 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 674 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test

NOEC (Desmodesmus subspicatus (green algae)): 200 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 23 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Information given is based on data obtained from similar substances.

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 3,000 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 24 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 10 mg/l Exposure time: 21 d End point: Reproduction Test Test Type: semi-static test Method: OECD Test Guideline 211

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**

Toxicity to fish	:	LC50 (Oryzias latipes (Orange-red killifish)): > 3,000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): > 10 mg/l Exposure time: 21 d End point: Reproduction Test Test Type: semi-static test Method: OECD Test Guideline 211 Remarks: Information given is based on data obtained from similar substances.

METHYLENE DIPHENYLISOCYANATE**:**

Toxicity to fish	:	LC50 (Oryzias latipes (Japanese medaka)): > 3,000 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Information given is based on data obtained from similar substances.
Toxicity to daphnia and other aquatic invertebrates	:	(Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Information given is based on data obtained from similar substances.
Toxicity to algae	:	NOEC (Desmodesmus subspicatus (green algae)): 1,640 mg/l End point: Growth inhibition Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201

Remarks: Information given is based on data obtained from similar substances.

Persistence and degradability
Components:
POLYOL**:**
Biodegradability : Biodegradation: 65 %
Exposure time: 20 d
Method: OECD Test Guideline 301F

N-BUTYL ACETATE**:**
Biodegradability : Result: Readily biodegradable.
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

POLYMETHYLENE POLYPHENYL ISOCYANATE**:**
Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

4,4'-DIPHENYLMETHANE DIISOCYANATE**:**
Biodegradability : Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 302C
Remarks: Information given is based on data obtained from similar substances.

METHYLENE DIPHENYLISOCYANATE**:**
Biodegradability : Result: Not readily biodegradable.
Remarks: Information given is based on data obtained from similar substances.

No data available
Bioaccumulative potential
Components:
N-BUTYL ACETATE**:**
Bioaccumulation : Bioconcentration factor (BCF): 15.3

Partition coefficient: n-octanol/water : log Pow: 1.78
No data available

Mobility in soil
Components:
No data available
Other adverse effects
No data available
Product:
Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Harmful to aquatic life.
Components:

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

General advice : The product should not be allowed to enter drains, water courses or the soil.
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	III

CFR_RAIL_C

UN	1133	Adhesives	3	III

U.S. DOT - INLAND WATERWAYS

UN	1133	Adhesives	3	III

TDG_ROAD_C

UN	1133	ADHESIVES	3	III

TDG_RAIL_C

UN	1133	ADHESIVES	3	III

TDG_INWT_C

UN	1133	ADHESIVES	3	III

INTERNATIONAL MARITIME DANGEROUS GOODS

UN	1133	ADHESIVES	3	III

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

UN	1133	Adhesives	3	III

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

UN	1133	Adhesives	3	III

MX_DG

UN	1133	ADHESIVOS	3	III

***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)

N-BUTYL ACETATE	123-86-4	5000	6583

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitisation
Specific target organ toxicity (single or repeated exposure)

SARA 302 : This material does not contain any components with a section 302 EHS TPQ.

SARA 313 The following components are subject to reporting levels established by SARA Title III, Section 313:

POLYMETHYLENE POLYPHENYL ISOCYANATE	9016-87-9	12.00 %
4,4'-DIPHENYLMETHANE DIISOCYANATE	101-68-8	4.20 %

California Prop. 65
WARNING: This product can expose you to chemicals including C.I. Solvent Yellow 14, lead compounds, arsenic, cadmium (non-pyrophoric), which is/are known to the State of California to cause cancer, and lead compounds, cadmium (non-pyrophoric), mercury, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

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

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

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

KECI : 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

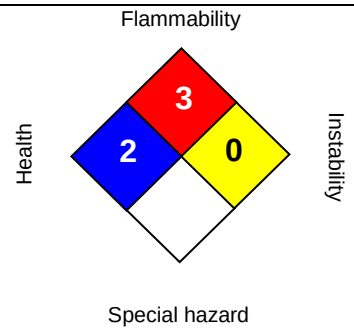
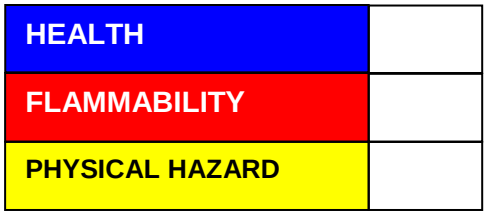
TCSI : On the inventory, or in compliance with the inventory

TSCA : On TSCA Inventory

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

SECTION 16. OTHER INFORMATION

Further information
Revision Date: 08/29/2019

NFPA:	HMIS III:
	 0 = not significant, 1 =Slight, 2 = Moderate, 3 = High 4 = Extreme, * = Chronic

NFPA Flammable and Combustible Liquids Classification
Flammable Liquid Class IC

Full text of H-Statements

H225	Highly flammable liquid and vapor.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure if inhaled.

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).

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations

Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative