

P.O. Box 4980
The Woodlands, TX 77387-4980

8 am to 5 pm Phone: (800) 257-5547
24-Hour Emergency Phone: (800) 328-8501
International Emergency Phone: (409) 727-0831
Asia Pacific Emergency Phone: (65) 6336-6011

Effective Date: 2/8/10

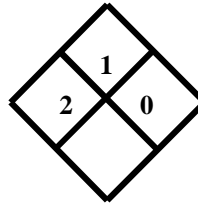
Material Safety Data Sheet

MSDS No: 5625

1. PRODUCT IDENTIFICATION

Trade Name: Araldite 2012/A

Chemical Family: Epoxy



NFPA RATING

Health:	2
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING

Intended Use or Product Type: Rapid multi-purpose adhesive resin

2. COMPOSITION / INFORMATION ON INGREDIENTS

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS				CARCINOGEN STATUS			
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	2425-79-8	Oxirane, 2,2'-[1,4-Butanediy]bis(Oxymethylene)]bis-Butanediol diglycidyl ether Common Name: Concentration 5.00 - 10.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	25068-38-6	Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane Bisphenol A diglycidyl ether polymer Common Name: Concentration 60.00 - 90.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	80-05-7	Phenol, 4,4'-(1-methylethylidene)bis- Common Name: Concentration Bisphenol A 1.00 - 5.00 % by wt	NE	NE	NE	NE	TLV 5 mg/m3	NR	NR	NR
*	9003-56-9	2-Propenenitrile, Polymer with 1,3-Butadiene and Ethenylbenzene Acrylonitrile butadiene styrene polymer Common Name: Concentration 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Can cause skin irritation, eye irritation, and allergic skin reaction. May be harmful if absorbed through skin or if swallowed.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

Inhalation: Remove to fresh air. Seek immediate medical attention.

Eyes: Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

Overexposure Effects: Can cause skin irritation, eye irritation, and allergic skin reaction. May be harmful if absorbed through skin or if swallowed.

Medical Conditions Aggravated by Exposure: Skin and eye conditions.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point:	> 200°C (> 392 °F)
Flash Point Method Used:	DIN 51758 (PMCC)
Flammable Limits in Air (Lower - % by volume):	Not established
Flammable Limits in Air (Upper - % by volume):	Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

Effective Date: 2/8/10

7. HANDLING AND STORAGE

Signal Word: Warning!

Precautions: Can cause skin irritation, eye irritation, and allergic skin reaction. May be harmful if absorbed through skin or if swallowed. Avoid contact with eyes, skin, and clothing. Avoid tasting or swallowing. Wash thoroughly after handling.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: Use NIOSH approved organic vapor cartridge respirator when vapor/mist exposure is likely.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Light Yellow
Odor:	Slight
Physical State:	Liquid
Solubility in Water:	Insoluble
Viscosity:	25000 - 45000 mPa at 25°C (77 °F)
Vapor Pressure:	< 0.2 Pa at 20°C (68 °F)
Specific Gravity:	1.17 g/cc at 25°C (77 °F)
Boiling Point:	> 200°C (> 392 °F)
Melting Point:	> 200°C (> 392 °F)
Evaporation Rate:	Not Determined
Density:	Not Determined
Vapor Density:	Not Determined
VOC:	0 g/L
pH:	6 at 20°C (68 °F)
Coefficient of water/oil:	Not Determined

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Effective Date: 2/8/10

Acute Oral Effects (LD50): Component(s) are slightly toxic, 500 - 5000 mg/kg (rat).
Butanediol diglycidyl ether= 1134 mg/kg (rat)

Acute Dermal Toxicity (LD50): Component(s) are slightly toxic, 1000 - 2000 mg/kg (rabbit).
Butanediol diglycidyl ether= 1130 mg/kg (rabbit)

Sensitization: Possible in susceptible individuals.

Carcinogenicity: Based on several dermal studies in mice, IARC had concluded in 1999 that diglycidyl ether of bisphenol A is not classifiable as a human carcinogen (Group 3) and has limited evidence of carcinogenicity in animals.

Skin Irritation: Irritant.

Eye Irritation: Irritant.

Reproduction: For diglycidyl ether of bisphenol A- There were no treatment-related histologic changes noted nor effects on reproductive performance in rats at any oral dose tested.

Teratogenicity: For diglycidyl ether of bisphenol A- No adverse effects on embryonic or fetal development was observed in rabbits after dermal exposure.

Mutagenicity: For diglycidyl ether of bisphenol A- In vitro tests showed mutagenic effects which were not observed with in vivo tests.

Test results for 1,4-Butanediol diglycidyl ether:

Ames test: positive

Sister chromatid exchange (Chinese hamster): Negative

Nucleus anomaly (Chinese hamster): Positive

Mouse lymphoma: Positive with and without activation.

Mutagenicity results were reported to the EPA.

Sub-Chronic: Diglycidyl ether of bisphenol A, applied to the skin of rats five times per week for approximately 13 weeks, caused no apparent systemic toxicity with the exception of decreased body weight and body weight gain.

12. ECOLOGICAL INFORMATION

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT: Non-Bulk

Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.):	Bisphenol A epoxy resin
Hazard Class:	9
ID Number:	UN 3082
Packing Group:	PG III
Marine Pollutant:	Marine Pollutant

IATA: Non-Bulk

Effective Date: 2/8/10

Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.):	Bisphenol A epoxy resin
Hazard Class:	9
ID Number:	UN 3082
Packing Group:	PG III
Marine Pollutant:	Marine Pollutant
IMDG: Non-Bulk	
Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.):	Bisphenol A epoxy resin
Hazard Class:	9
ID Number:	UN 3082
Packing Group:	PG III
Marine Pollutant:	Marine Pollutant
TDG: Non-Bulk	
Proper Shipping Name:	Environmentally hazardous substance, liquid, n.o.s.
Technical Shipping Name (If n.o.s.):	Bisphenol A epoxy resin
Hazard Class:	9
ID Number:	UN 3082
Packing Group:	PG III
Marine Pollutant:	Marine Pollutant

Department of Transportation: Under 49 CFR 171.4 (c) NONBULK shipments of marine pollutants are not regulated for transport by motor vehicles, rail cars or aircraft. NONBULK shipments of marine pollutants are regulated when transported by vessel (ship).

15. REGULATORY INFORMATION

US Federal Regulations:

Occupational Safety and Health Act (OSHA): This product is considered to be a hazardous chemical under the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Resource Conservation and Recovery Act (RCRA): Not a hazardous waste under RCRA (40 CFR 261).

SARA Title III: Section 304 - CERCLA: This product contains the following chemicals regulated under Section 304 (40 CFR 302) as hazardous substance(s) for emergency release notification ("CERCLA" List):

Chemical Name: Phenol, 4,4'-(1-methylethylidene)bis-

Common Name: Bisphenol A

CAS Number: 80-05-7

Percent in Composition: 1 - 5 % by wt

SARA Title III: Section 313 Toxic Chemical List (TCL): This product contains a toxic chemical(s) for routine annual toxic chemical release reporting under section 313 (40 CFR 372). This information must be included in all MSDS's copied or distributed for this material.

Chemical Name: Phenol, 4,4'-(1-methylethylidene)bis-

Common Name: Bisphenol A

Percent in Composition: 1 - 5 % by wt

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

Effective Date: 2/8/10

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

International Regulations:

Australian Inventory Status: This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status: This product contains only chemicals that are currently listed on the Canadian Domestic Substance List.

Canadian WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. D2B

European Inventory Status (EINECS): This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Japanese Inventory Status: This product contains only chemicals currently listed on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

State Regulations:

California Proposition 65: This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-to-Know: The following is required composition information:

Chemical Name: Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane
Common Name: Bisphenol A diglycidyl ether polymer
CAS Number: 25068-38-6
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Oxirane, 2,2'-[1,4-Butanediylbis(Oxymethylene)]bis-
Common Name: Butanediol diglycidyl ether
CAS Number: 2425-79-8
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: 2-Propenenitrile, Polymer with 1,3-Butadiene and Ethenylbenzene
Common Name: Acrylonitrile butadiene styrene polymer
CAS Number: 9003-56-9
Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Phenol, 4,4'-(1-methylethylidene)bis-
Common Name: Bisphenol A
CAS Number: 80-05-7
Comment: Environmental Hazardous Substance

16. OTHER INFORMATION

MSDS No: 5625
Reason Issued: 2/8 update DOT

Effective Date: 2/8/10

Prepared By: Matt Austin
Approved By: Matt Austin
Title: EHS Chemist

Other Information: DLW [D24]

Disclaimer: The information and recommendations contained herein are based upon tests in controlled laboratory conditions, are believed to be correct, and are provided for the sole purpose of hazard communication as part of Huntsman's product safety program. This product has not been tested for, and therefore is not recommended or suitable for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended or likely, or for uses for which implantation within the human body is intended, and Huntsman assumes no liability for any such uses.

The information and recommendations contained herein are not intended to constitute performance information concerning the product, which is available in separate technical data sheets available from Huntsman upon request. Users are urged, and are urged to urge others who may come in contact with the product, to obtain and consult data sheets prior to purchase, use, transportation or storage of the product.

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USER SHOULD CONSULT A LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENTAL AGENCY TO DETERMINE THE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT. HUNTSMAN DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE. NO PART OF THIS DATA SHEET MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM, OR BY ANY MEANS, WITHOUT PERMISSION IN WRITING FROM HUNTSMAN. ALL REQUESTS FOR PERMISSION TO REPRODUCE MATERIAL FROM THIS DATA SHEET SHOULD BE DIRECTED TO HUNTSMAN, MANAGER, PRODUCT SAFETY AT THE ABOVE ADDRESS.



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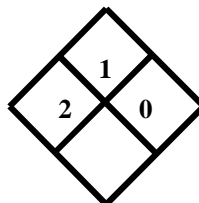
Material Safety Data Sheet

MSDS No: 5626

1. PRODUCT IDENTIFICATION

Trade Name: Araldite 2012 B US

Chemical Family: Amine



NFPA RATING

Health:	2
Flammability:	1
Reactivity:	0
Personal Protection:	

HMIS RATING

Intended Use or Product Type: Rapid multi-purpose adhesive hardener

2. COMPOSITION / INFORMATION ON INGREDIENTS

O S H A	CAS No.	CHEMICAL IDENTITY	EXPOSURE LIMITS				CARCINOGEN STATUS			
			ACGIH		OSHA		MFR.	IARC	NTP	OSHA
			TWA	STEL	PEL	STEL				
*	10563-29-8	1,3-Propanediamine, N'-(3-aminopropyl)-N,N-dimethyl-Dimethylene Propylene Triamine Common Name: Concentration: 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	123-86-4	Acetic Acid, Butyl Ester Common Name: Concentration: 1.00 - 5.00 % by wt	150 ppm	200 ppm	150 ppm	200 ppm	NE	NR	NR	NR
*	90-72-2	Phenol, 2,4,6-tris[(dimethylamino)methyl]- Common Name: Concentration: 1.00 - 5.00 % by wt	NE	NE	NE	NE	TLV 5 ppm	NR	NR	NR
*	104-19-8	1-Piperazineethanamine, N,N,4-trimethyl- Common Name: Concentration: 1.00 - 5.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	118440-44-1	Polymer of epoxy phenolic novolac, epoxy resin, and triethylene glycol dimercaptan Aliphatic mercaptan epoxy resin polymer Common Name: Concentration: 60.00 - 100.00 % by wt	NE	NE	NE	NE	NE	NR	NR	NR
*	14970-87-7	Ethanthiol, 2,2'-[1,2-Ethanediy]bis(oxy)]bis-	NE	NE	NE	NE	NE	NR	NR	NR



Effective Date: 7/15/10

Common Name:	Mercaptan								
Concentration	1.00 - 5.00 % by wt								

NE = Not Established NR = Not Reviewed * = OSHA Hazardous Ingredient

3. HAZARDS IDENTIFICATION

Emergency Overview: Can cause skin irritation, eye irritation, and allergic skin reaction. Can be harmful if absorbed through skin and may be harmful if swallowed.

Primary Route(s) of Entry: Dermal; heated product may produce inhalable vapors.

4. FIRST AID MEASURES

Ingestion: Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes. Seek immediate medical attention.

Inhalation: Remove to fresh air. Seek immediate medical attention.

Eyes: Immediately flush eyes with water for at least 15 minutes. Seek immediate medical attention.

Overexposure Effects: Can cause skin irritation, eye irritation, and allergic skin reaction. Can be harmful if absorbed through skin and may be harmful if swallowed.

Medical Conditions Aggravated by Exposure: Skin and eye conditions.

Additional Information: Referral to a physician is recommended if there is any question about the seriousness of any injury.

5. FIRE FIGHTING MEASURES

Flash Point: > 100°C (> 212 °F)

Flash Point Method Used: Estimated

Flammable Limits in Air (Lower - % by volume): Not established

Flammable Limits in Air (Upper - % by volume): Not established

Fire Fighting Extinguishing Media: Carbon dioxide, dry chemical, foam, water.

Fire Fighting Equipment: Use self-contained breathing apparatus.

Fire and Explosion Hazards: Decomposition and combustion products may be toxic.

6. ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Remove spillage by absorbing in absorbent material.

Effective Date: 7/15/10

7. HANDLING AND STORAGE

Signal Word: Warning!

Precautions: Can cause skin irritation, eye irritation, and allergic skin reaction. Can be harmful if absorbed through skin and may be harmful if swallowed. Avoid contact with eyes, skin, and clothing. Avoid tasting or swallowing. Wash thoroughly after handling.

Other Handling Information: Nuisance dust may be generated when sanding or sawing cured material.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Skin Protection: Wear impermeable gloves.

Respiratory Protection: Use NIOSH approved organic vapor cartridge respirator when vapor/mist exposure is likely.

Eye Protection: Wear splash-proof chemical goggles.

Engineering Controls: General mechanical and local exhaust in accordance with ACGIH recommendations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Yellow
Odor:	Slight
Physical State:	High Viscosity Liquid
Solubility in Water:	Insoluble
Viscosity:	20000 - 40000 mPa at 25°C (77 °F)
Vapor Pressure:	< 1 Pa at 20°C (68 °F)
Specific Gravity:	1.165 g/cc at 25°C (77 °F)
Boiling Point:	> 200°C (> 392 °F)
Melting Point:	Not Determined
Decomposition Temperature:	> 200°C (> 392 °F)
Evaporation Rate:	Not Determined
Vapor Density:	Not Determined
pH:	Not Evaluated
Coefficient of water/oil:	Not Evaluated

10. STABILITY AND REACTIVITY

Conditions to Avoid: Excessive heat for prolonged periods of time.

Stability: Stable.

Incompatibility: Strong oxidizers, acids and bases.

Hazardous Decomposition Products: Combustion may form toxic materials, such as carbon dioxide, carbon monoxide.

Hazardous Polymerization: Will not occur.

Effective Date: 7/15/10

11. TOXICOLOGICAL INFORMATION**Acute Oral Effects (LD50):** Component(s) are slightly toxic, 500 - 5000 mg/kg (rat).

1-(Dimethylaminoethyl)-4-methyl piperazine= 770 mg/kg (rat).

Dimethylene propylene triamine= 1670 mg/kg (rat)

Acute Dermal Toxicity (LD50): Component(s) are toxic, 200 - 1000 mg/kg (rabbit).

1-(Dimethylaminoethyl)-4-methyl piperazine= 510 mg/kg (rabbit).

Dimethylene propylene triamine= 1310 mg/kg (rabbit).

Sensitization: Possible in susceptible individuals.**Skin Irritation:** Irritant.**Eye Irritation:** Irritant.**12. ECOLOGICAL INFORMATION****13. DISPOSAL CONSIDERATIONS****Waste Disposal Method:** Consult qualified local or corporate personnel for method that will comply with local, state and federal health and environmental regulations.**14. TRANSPORT INFORMATION****DOT: Non-Bulk****Proper Shipping Name:** Not Regulated**IATA: Non-Bulk****Proper Shipping Name:** Not Regulated**IMDG: Non-Bulk****Proper Shipping Name:** Not Regulated**TDG: Non-Bulk****Proper Shipping Name:** Not Regulated**15. REGULATORY INFORMATION****US Federal Regulations:****Occupational Safety and Health Act (OSHA):** This Material Safety Data Sheet (MSDS) has been prepared in compliance with the federal OSHA Hazard Communication Standard 29 CFR 1910.1200. This product is considered to be a hazardous chemical under that standard.**Resource Conservation and Recovery Act (RCRA):** Not a hazardous waste under RCRA (40 CFR 261).**SARA Title III: Section 313 Toxic Chemical List (TCL):** This product does not contain any chemicals for routine annual toxic chemical release reporting under Section 313 (40 CFR 372).

Effective Date: 7/15/10

TSCA Section 8(b) - Inventory Status: All chemical components of this product are in compliance with TSCA inventory requirements.

TSCA Section 12(b) - Export Notification: This product does not contain any chemical(s) that are subject to a Section 12(b) export notification.

International Regulations:

Australian Inventory Status: This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances.

Canadian Inventory Status: This product contains one or more chemicals currently not on the Canadian Domestic Substance List.

Canadian WHMIS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations. D2B

European Inventory Status (EINECS): This product contains only chemicals that are currently listed on the European Inventory of Existing Commercial Chemical Substances (EINECS).

Japanese Inventory Status: This product contains one or more chemicals currently not on the Japanese Ministry of International Trade and Industry List of Existing and New Chemical Substances.

State Regulations:

California Proposition 65: This product does not contain any chemicals currently on the California list of Known Carcinogens and Reproductive Toxins.

Pennsylvania Right-to-Know: The following is required composition information:

Chemical Name: Polymer of epoxy phenolic novolac, epoxy resin, and triethylene glycol dimercaptan

Common Name: Aliphatic mercaptan epoxy resin polymer

CAS Number: 118440-44-1

Comment: Not on Pennsylvania Hazardous Substance List

Chemical Name: Acetic Acid, Butyl Ester

Common Name: n-Butyl acetate

CAS Number: 123-86-4

Comment: Environmental Hazardous Substance

16. OTHER INFORMATION

MSDS No:	5626
Reason Issued:	7/10 update
Approved By:	Matt Austin
Title:	EHS Chemist

Other Information: DLW (D10020030) [D24]

Disclaimer: The information and recommendations contained herein are based upon tests in controlled laboratory conditions, are believed to be correct, and are provided for the sole purpose of hazard communication as part of Huntsman's product safety

Effective Date: 7/15/10

program. This product has not been tested for, and therefore is not recommended or suitable for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended or likely, or for uses for which implantation within the human body is intended, and Huntsman assumes no liability for any such uses.

The information and recommendations contained herein are not intended to constitute performance information concerning the product, which is available in separate technical data sheets available from Huntsman upon request. Users are urged, and are urged to urge others who may come in contact with the product, to obtain and consult data sheets prior to purchase, use, transportation or storage of the product.

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