SAFETY DATA SHEET

Revision date 15-Jun-2017 **Version** 5 **Supersedes Date:** 09-Jun-2017

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name **VERY SLOW URETHANE HARDENER**

Product Code **AD-678.L25**

UN/ID no UN1263

Recommended Use Paint, Coatings

Details of the supplier of the safety data sheet

See section 16 for more information

ADVANTAGE REFINISH PRODUCTS
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Section 2: HAZARDS IDENTIFICATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

Classification

Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 3

Label elements

Signal word **DANGER**

HAZARD STATEMENTS
Flammable liquid and vapor
Harmful if inhaled
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
May cause cancer
May cause respiratory irritation

PREVENTION
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. P210 - 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.

RESPONSE
IF exposed or concerned: Get medical advice/attention.

Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Skin
If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Ingestion
Do NOT induce vomiting. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Fire
In case of fire: Use CO2, dry chemical, or foam for extinction.

STORAGE
Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool.

DISPOSAL
Dispose of contents/containers in accordance with local regulations.

OTHER HAZARDS
Not applicable.

UNKNOWN ACUTE TOXICITY
0% of the mixture consists of ingredient(s) of unknown toxicity.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	weight-%
Hexamethylene diisocyanate homopolymer	28182-81-2	30 - 35
Methyl n-amyl ketone	110-43-0	20 - <25
Isophoronediisocyanate, Homopolymer	53880-05-0	20 - <25
Diisobutyl ketone	108-83-8	5 - <10
n-Butyl acetate	123-86-4	3 - <5

Solvent naphtha, petroleum, light aromatic	64742-95-6	3 - <5
Benzene, 1,2,4-trimethyl-	95-63-6	3 - <5
Isophorone diisocyanate	4098-71-9	0.3 - <1
Cumene	98-82-8	0.3 - <1
Ethylbenzene	100-41-4	0.1 - <0.3

Section 4: FIRST AID MEASURES

First Aid Measures

General advice
IF exposed or concerned: Get medical advice/attention

Eye contact
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention

Skin Contact
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower If skin irritation or rash occurs: Get medical advice/attention Wash contaminated clothing before reuse

Inhalation
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician IF INHALED: Remove person to fresh air and keep comfortable for breathing

Ingestion
Do NOT induce vomiting IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: FIRE FIGHTING MEASURES

Flammable properties Combustible liquid.

flash point 102 °F / 39 °C

Upper flammability limit: No information available

Lower flammability limit: No information available

Autoignition temperature No information available

Explosion data
Sensitivity to Mechanical Impact No information available.
Sensitivity to Static Discharge No information available.

Suitable extinguishing media
Dry chemical, CO2, water spray or alcohol-resistant foam.

Not to be used for safety reasons: Strong water jet

Hazardous combustion products Carbon monoxide. Carbon dioxide (CO2).

Specific hazards arising from the chemical
Burning produces heavy smoke. Fire may produce irritating and/or toxic gases. In the event of fire and/or explosion do not breathe fumes. May cause sensitization by inhalation. May cause sensitization by skin contact.

Special protective equipment for fire-fighters
Wear self-contained breathing apparatus and protective suit. Cool containers with flooding quantities of water until well after fire is out. Do not allow run-off from fire-fighting to enter drains or water courses.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid breathing vapors or mists. Remove all sources of ignition. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Take precautionary measures against static discharges.

Environmental precautions
Do not allow into any sewer, on the ground or into any body of water. If the product contaminates lakes, rivers or sewage, inform appropriate authorities in accordance with local regulations. Prevent further leakage or spillage if safe to do so. Local authorities should be advised if significant spillages cannot be contained.

Methods for containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Dispose of waste product or used containers according to local regulations. Clean with detergents. Avoid solvent cleaners. Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. Take up mechanically, placing in appropriate containers for disposal.

Section 7: HANDLING AND STORAGE

General advice
Persons with a history of asthma, allergies, chronic or recurrent respiratory disease should not be exposed to any process in which this product is used. Examination of lung function should be carried out on a regular basis on persons spraying this product.

Advice on safe handling
Prevent the creation of flammable or explosive concentrations of vapor in air and avoid vapor concentration higher than the occupational exposure limits. Operators should wear anti-static footwear and clothing and floors should be of the conducting type. Use personal protection recommended in Section 8. Never use pressure to empty container. Comply with the health and safety at work laws. Prevent product from entering drains. Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Use only with adequate ventilation. Do not breathe dust/fume/gas/mist/vapors/spray. Use only in well-ventilated areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. All equipment used when handling the product must be grounded.

General Hygiene Considerations
When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Avoid contact with skin, eyes or clothing.

Storage Conditions
Keep/store only in original container. Store in accordance with local regulations. Keep unauthorized personnel away. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place. Keep tightly closed in a dry and cool place.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Exposure Limits
If S* appears in the OEL table, it indicates this chemical contains a skin notation.

Chemical Name	ACGIH TLV	Alberta	British Columbia	Ontario TWA	Quebec	OSHA PEL
Methyl n-amyl ketone 110-43-0	TWA: 50 ppm	TWA: 50 ppm TWA: 233 mg/m^3	TWA: 50 ppm	TWA: 25 ppm TWA: 115 mg/m^3	TWA: 50 ppm TWA: 233 mg/m^3	TWA: 100 ppm TWA: 465 mg/m^3
Diisobutyl ketone 108-83-8	TWA: 25 ppm	TWA: 25 ppm TWA: 145 mg/m^3	TWA: 25 ppm	TWA: 25 ppm	TWA: 25 ppm TWA: 145 mg/m^3	TWA: 50 ppm TWA: 290 mg/m^3

n-Butyl acetate 123-86-4	STEL: 200 ppm TWA: 150 ppm	TWA: 150 ppm TWA: 713 mg/m³ STEL: 200 ppm STEL: 950 mg/m³	TWA: 20 ppm	TWA: 150 ppm STEL: 200 ppm	TWA: 150 ppm TWA: 713 mg/m³ STEL: 200 ppm STEL: 950 mg/m³	TWA: 150 ppm TWA: 710 mg/m³
Benzene, 1,2,4-trimethyl- 95-63-6	TWA: 25 ppm	TWA: 25 ppm TWA: 123 mg/m³	TWA: 25 ppm	TWA: 25 ppm	TWA: 25 ppm TWA: 123 mg/m³	
Isophorone diisocyanate 4098-71-9	TWA: 0.005 ppm	TWA: 0.005 ppm TWA: 0.05 mg/m³	TWA: 0.005 ppm Ceiling: 0.01 ppm Sensitizer	TWA: 0.005 ppm CEV: 0.02 ppm	TWA: 0.005 ppm TWA: 0.045 mg/m³	
Cumene 98-82-8	TWA: 50 ppm	TWA: 50 ppm TWA: 246 mg/m³	TWA: 25 ppm STEL: 75 ppm	TWA: 50 ppm	TWA: 50 ppm TWA: 246 mg/m³	TWA: 50 ppm TWA: 245 mg/m³ S*
Ethylbenzene 100-41-4	TWA: 20 ppm	TWA: 100 ppm TWA: 434 mg/m³ STEL: 125 ppm STEL: 543 mg/m³	TWA: 20 ppm	TWA: 20 ppm	TWA: 100 ppm TWA: 434 mg/m³ STEL: 125 ppm STEL: 543 mg/m³	TWA: 100 ppm TWA: 435 mg/m³

Engineering Controls
Ensure adequate ventilation, especially in confined areas. Provide local exhaust ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal Protective Equipment

Eye/face protection
Tight sealing safety goggles.

Hand Protection
There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical / chemical damage and poor maintenance. Wear protective gloves.

Skin and body protection
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear suitable protective clothing. Personnel should wear anti-static clothing made of natural fiber or of high temperature resistant synthetic fiber.

Respiratory protection
In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

Thermal Protection
No information available

Environmental exposure controls
Do not allow into any sewer, on the ground or into any body of water. Local authorities should be advised if significant spillages cannot be contained.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid
Appearance	No information available
Odor	Solvent
Color	clear
Odor Threshold	No information available
pH value	No information available
Melting point/freezing point	No information available
Boiling point / boiling range	No information available °C / °F
flash point	39 °C / 102 °F
evaporation rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor Pressure	No information available
vapor density	No information available

Density (lbs per US gallon)	8.23
specific gravity	.99
Solubility(ies)	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available

Other information

Section 10: STABILITY AND REACTIVITY

Stability Stable under normal conditions.

Incompatible materials Strong oxidizing agents.

Conditions to avoid Heat, flames and sparks.

Hazardous Decomposition Products Carbon monoxide. Carbon dioxide (CO2).

Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization None under normal processing.

Section 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Eye contact
Not applicable
Skin Contact
May cause an allergic skin reaction
Ingestion
Not applicable
Inhalation
Harmful if inhaled
May cause respiratory irritation

Numerical measures of toxicity - Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Hexamethylene diisocyanate homopolymer 28182-81-2	-	-	= 18500 mg/m³ (Rat) 1 h
Methyl n-amyl ketone 110-43-0	= 1670 mg/kg (Rat) = 1600 mg/kg (Rat)	= 12600 µL/kg (Rabbit) = 12.6 mL/kg (Rabbit)	> 2000 ppm (Rat) 4 h
Isophoronediisocyanate, Homopolymer 53880-05-0	-	-	-
Diisobutyl ketone 108-83-8	= 5750 mg/kg (Rat)	= 16 g/kg (Rabbit)	> 2300 ppm (Rat) 4 h
n-Butyl acetate 123-86-4	= 10768 mg/kg (Rat)	> 17600 mg/kg (Rabbit)	= 390 ppm (Rat) 4 h
Solvent naphtha, petroleum, light aromatic 64742-95-6	= 8400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 3400 ppm (Rat) 4 h
Benzene, 1,2,4-trimethyl- 95-63-6	= 3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	= 18 g/m³ (Rat) 4 h
Isophorone diisocyanate 4098-71-9	= 1097 mg/kg (Rat)	1060 - 4780 mg/kg (Rabbit)	= 0.135 mg/L (Rat) 4 h
Cumene 98-82-8	= 1400 mg/kg (Rat)	= 12300 µL/kg (Rabbit)	> 3577 ppm (Rat) 6 h = 39000 mg/m³ (Rat) 4 h
Ethylbenzene 100-41-4	= 3500 mg/kg (Rat)	= 15400 mg/kg (Rabbit)	= 17.2 mg/L (Rat) 4 h

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral) 2095 Mg/kg
ATEmix (inhalation-dust/mist) 2.5 mg/l
ATEmix (inhalation-vapor) 18 mg/l

UNKNOWN ACUTE TOXICITY 0% of the mixture consists of ingredient(s) of unknown toxicity.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chemical Name	ACGIH	IARC	NTP	OSHA
Cumene 98-82-8		Group 2B	Reasonably Anticipated	X
Ethylbenzene 100-41-4	A3	Group 2B		X

ACGIH (American Conference of Governmental Industrial Hygienists)
A3 - Animal Carcinogen.
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans.
NTP (National Toxicology Program)
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen.
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present.

Skin corrosion/irritation Not applicable
Serious eye damage/eye irritation Not applicable
Skin sensitization May cause an allergic skin reaction
Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled
Germ cell mutagenicity Not applicable
Carcinogenicity May cause cancer
Reproductive Toxicity Not applicable
Specific target organ toxicity (single exposure) May cause respiratory irritation
Specific target organ toxicity (repeated exposure) Not applicable
Aspiration hazard Not applicable

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity
Environmental precautions Prevent product from entering drains.

Persistence and degradability
No information available

Bioaccumulation
No information available

Mobility
No information available

Other adverse effects No information available

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues/unused products Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated packaging Improper disposal or reuse of this container may be dangerous and illegal.

Section 14: TRANSPORT INFORMATION

	TDG	IMDG	IATA
UN/ID no	UN1263	UN1263	UN1263
Proper shipping name	Paint	Paint	Paint
Hazard Class	3	3	3
Packing Group	III	III	III
Environmental hazard	Not applicable		
Special Provisions		163, 223, 367 955	A3, A72, A192
		EmS-No F-E, S-E	

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

The supplier may apply one of the following exceptions: Combustible Liquid (49 CFR 173.150(f)); Consumer Commodity (49 CFR 173.150(c), ICAO/IATA SP A112); Limited Quantity (49 CFR 173.150(b), ICAO Part 3 Chapter 4, IATA 2.7, IMDG Chapter 3.4); Viscous Liquid (49 CFR 173.121(b), IMDG 2.3.2.2, IATA 3.3.3.1.1, ICAO 3.2.2, ADR 2.2.3.1.5); Does Not Sustain Combustion (49 CFR 173.120(a), IATA 3.3.1.3, ICAO 3.1.3, IMDG 2.3.1.3, ADR 2.2.3.1.1 Note 1); or others as allowed under hazardous materials/dangerous goods regulations.

Section 15: REGULATORY INFORMATION

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory — All components are listed or exempt from listing

DSL - Canadian Domestic Substances List — All components are listed or exempt from listing

Chemical Name	Canada - NPRI (National Pollutant Release Inventory)
Methyl n-amyl ketone	Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)
Diisobutyl ketone	Part 4 Substance (as set out in Section 65 of the List of Toxic Substances in Schedule 1 of the Canadian Environmental Protection Act, 1999)
n-Butyl acetate	Part 5, Individual Substances
Solvent naphtha, petroleum, light aromatic	Part 5, Other Groups and Mixtures
Benzene, 1,2,4-trimethyl-	Part 1, Group A Substance; Part 5, Individual Substances
Isophorone diisocyanate	Part 1, Group A Substance
Cumene	Part 1, Group A Substance
Ethylbenzene	Part 1, Group A Substance

Section 16: OTHER INFORMATION

HMIS

Health hazards	2*
** = Chronic Health Hazard*	
Flammability	2
Physical hazards	0
Personal Protection	X

Prepared By Regulatory Department

Revision date 15-Jun-2017

Revision Note No information available

Disclaimer

The information on this Safety Data Sheet (SDS) is based on the present state of our knowledge, current national legislation and guidelines. As the specific conditions of use of the product are outside the supplier's knowledge and control the user is responsible for ensuring that the requirements of relevant legislation are complied with. This SDS should not be construed as any guarantee of the technical performance or suitability for particular applications. UNLESS SUPPLIER AGREES OTHERWISE IN WRITING, SUPPLIER MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR FREEDOM FROM PATENT INFRINGEMENT. SUPPLIER WILL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES.

End of Safety Data Sheet