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Revision Number 3

This document complies with the US OSHA Hazard Communication Standard (29 CFR 1910.1200), Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR), and Mexico's NMX-R-019-SC-2011.

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

GHS product identifier

Product Name Activator 9711

Other means of identification

Synonyms DuraShield 110 Part A – Iso , DuraShield 140 Part A – Iso, DuraShield 110 ISO, DuraShield 140 ISO

Recommended use of the chemical and restrictions on use

Recommended Use Activator for Curing Chemical Resistant Coating

Uses advised against Consumer use

Supplier's details

Initial Supplier

Cloverdale Paint Inc.
400-2630 Croydon Drive
Surrey, British Columbia
V3Z 6T3

Manufacturer Address

LifeLast. Inc.
3813 Helios Way Suite 190
Pflugerville, TX 78660
Telephone number: 512-628-2112

Emergency telephone number

Emergency Telephone Number Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

This product is considered hazardous according to the criteria set within the US OSHA Hazard Communication Standard (29 CFR 1910.1200), Canada WHMIS 2015 which includes the amended Hazardous Products Act (HPA) and the Hazardous Products Regulation (HPR), and Mexico's NMX-R-019-SC-2011.

Acute Inhalation Toxicity - Dusts and Mists	Category 4
Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 2
Specific Target Organ Systemic Toxicity (Single Exposure)	Category 3

Specific Target Organ Toxicity (Repeated Exposure)

Category 2

Label Elements

Signal Word

Danger



Hazard Statements

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Suspected of causing cancer.

May cause respiratory irritation

May cause damage to organs through prolonged or repeated exposure

Physical and Health Hazards Not Otherwise Classified

Not applicable.

Precautionary Statements

Prevention

- Use only outdoors or in a well-ventilated area.
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- Wash face, hands and any exposed skin thoroughly after handling.
- In case of inadequate ventilation wear respiratory protection.
- Contaminated work clothing should not be allowed out of the workplace.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wear protective gloves/protective clothing/eye protection/face protection.

General Advice

- If exposed or concerned: Get medical attention/advice

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 ON SKIN: Wash with plenty of soap and water.
- Take off contaminated clothing and wash before reuse.
- If skin irritation or rash occurs: Get medical advice/attention.

Inhalation

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Storage

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

Disposal

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

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS**Synonyms**DuraShield 110 Part A – Iso , DuraShield 140 Part A – Iso,
DuraShield 110 ISO, DuraShield 140 ISO

Chemical Name	CAS-No	Weight %	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
4,4-Methylenediphenyl diisocyanate	101-68-8	30-60	-	-
Polymethylene polyphenylene isocyanate	9016-87-9	13-30	-	-

4. FIRST AID MEASURES**Description of necessary first-aid measures****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

Wash skin with soap and water. If skin irritation or rash occurs: Get medical advice/attention. Remove and wash contaminated clothing before re-use.

Inhalation

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

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

Most important symptoms/effects, acute and delayed**Most Important Symptoms/Effects** Asthma-like and/ or skin allergy-like symptoms. Rashes. Irritation.**Indication of immediate medical attention and special treatment needed, if necessary****Notes to Physician**

May cause sensitization by inhalation and skin contact.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

Water.

Specific Hazards Arising from the Chemical

Closed container may forcibly rupture under extreme heat or when contents are contaminated with water. Use cold-water spray to cool fire-exposed containers to minimize the risk of rupture. Large fires can be extinguished with large volumes of water applied from a safe distance, since reaction between water and hot isocyanate can be vigorous.

Explosion Data**Sensitivity to Mechanical Impact**

None.

Sensitivity to Static Discharge

None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists.

Environmental Precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so. See Section 12 for additional Ecological Information. Prevent entry into waterways, sewers, basements or confined areas.

Methods and materials for containment and cleaning up

Methods for Containment Dike far ahead of liquid spill for later disposal.

Methods for Cleaning Up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Use personal protective equipment. Do not fill the container more than 2/3 full to allow for expansion, and do not tighten the lid on the container. Repeat application of absorbent material until all the liquid has been removed from the surface.

Collect material in open-head metal containers. Repeat applications of decontamination solution, with scrubbing, followed by absorbent material until decontaminated. Check for residual contamination. Swype test kits have been used for this purpose. Apply lid loosely and allow containers to vent for 72 hours to let carbon dioxide escape.

Neutralizing solutions:

- 1) Colorimetric Laboratories Inc. (CLI) decontamination solution
- 2) A mixture of 75% water, 20% non-ionic surfactant (e.g. Poly-tergent SL-62, Tergitol TMN-10) and 5% n-propanol.
- 3) A mixture of 80% water and 20% non-ionic surfactant.
- 4) mixture of 90% water, 3 - 8% ammonium hydroxide or concentrated ammonia, and 2% liquid detergent.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wash thoroughly after handling. Use only in ventilated areas. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Store locked up. Store in a well-ventilated place. Keep cool.

Incompatible Products Water, Strong oxidizing agents, Strong bases, Amines, Alcohols, Copper alloys.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
4,4-Methylenediphenyl diisocyanate 101-68-8	TWA: 0.005 ppm	Ceiling: 0.02 ppm Ceiling: 0.2 mg/m ³	IDLH: 75 mg/m ³ Ceiling: 0.020 ppm 10 min

			Ceiling: 0.2 mg/m ³ 10 min TWA: 0.005 ppm TWA: 0.05 mg/m ³
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ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Appropriate engineering controls

Engineering Measures Showers
 Eyewash stations
 Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tightly fitting safety goggles.
Skin and Body Protection Wear protective gloves/clothing. Gloves should be worn. Nitrile rubber gloves showed excellent resistance. Butyl rubber, isoprene and PVC are also effective.
Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene Measures Do not eat, drink or smoke when using this product. Provide regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid.	Appearance	Brown.
Odor	No information available.	Odor Threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks/ - Method</u>
pH	No data available	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	No data available	None known
Flash Point	> 110 °C / > 230 °F	Seta closed cup
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Relative Density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known

Flammable Properties Not flammable

Explosive Properties No data available
Oxidizing Properties No data available

Other information

VOC Content (%) No data available

10. STABILITY AND REACTIVITY

<u>Reactivity</u>	No data available.
<u>Chemical stability</u>	Stable under recommended storage conditions.
<u>Possibility of hazardous reactions</u>	None under normal processing.
<u>Hazardous Polymerization</u>	Contact with moisture, other materials that react with isocyanates, or temperatures above 350°F (177°C), may cause polymerization.
<u>Conditions to avoid</u>	Protect from moisture. High temperatures.
<u>Incompatible materials</u>	Water, Strong oxidizing agents, Strong bases, Amines, Alcohols, Copper alloys.
<u>Hazardous decomposition products</u>	Carbon oxides, Nitrogen oxides (NOx), Isocyanates, Isocyanic acid.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	May be harmful if inhaled. May cause irritation of respiratory tract. May cause respiratory sensitization.
Eye Contact	Causes serious eye irritation.
Skin Contact	Causes skin irritation. May cause sensitization by skin contact.
Ingestion	Ingestion may cause irritation to mucous membranes.

Numerical measures of toxicity - Product

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

LD50 Oral	7513 mg/kg; Acute toxicity estimate
Inhalation dust/mist	1.2 mg/L; Acute toxicity estimate

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
4,4-Methylenediphenyl diisocyanate	= 9200 mg/kg (Rat) = 31600 mg/kg (Rat)	-	= 369 mg/m ³ (Rat) 4 h

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms	Difficulty in breathing. Coughing and/ or wheezing. Allergic skin reactions or irritation.
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Delayed and immediate effects and also chronic effects from short and long term exposure

Respiratory or Skin Sensitization	May cause sensitization by inhalation and skin contact
Germ Cell Mutagenicity	No information available
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
4,4-Methylenediphenyl diisocyanate		Group 3	-	-
Polymethylene polyphenylene isocyanate		Group 3		

IARC: (International Agency for Research on Cancer)

Group 3 - Not Classifiable as to its Carcinogenicity to Humans

Reproductive Toxicity	No information available
STOT - single exposure	May cause respiratory irritation.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Aspiration Hazard	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Not Classified

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
4,4-Methylenediphenyl diisocyanate 101-68-8	NOEC: 1640 mg/l Green algae	LC50: >1000 mg/l (Danio rerio, zebra fish 96 h)		EC50: >1000 mg.l (water flea, Daphnia magna, 24h)

Persistence and Degradability Not readily biodegradable.

Bioaccumulation Does not bioaccumulate

Chemical Name	Log Pow
4,4-Methylenediphenyl diisocyanate	4.5

Mobility No information available

Other Adverse Effects No information available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. In addition, consult with the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

Note: This product contains hazardous materials with reportable quantities as listed in Section 15. Based on net weight of product, the shipping description and label may need to be marked with "RQ."

DOT Not regulated

TDG Not regulated

MEX Not regulated

15. REGULATORY INFORMATION

International Regulations

Ozone depleting substances	Not applicable
Persistent Organic Pollutants	Not applicable
Hazardous Waste	Not applicable
The Rotterdam Convention (Prior	Not applicable

Informed Consent)
International Convention for the Prevention of Pollution from Ships (MARPOL) Not applicable

International Inventories

TSCA Complies
DSL/NDSL Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
4,4-Methylenediphenyl diisocyanate	101-68-8	60	1.0
Polymethylene polyphenylene isocyanate	9016-87-9	30	1.0

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications. Under the amended regulations at 40 CFR 370, EPCRA 311/312 Tier II reporting for the 2017 calendar year will need to be consistent with updated hazard classifications.

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
4,4-Methylenediphenyl diisocyanate	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
4,4-Methylenediphenyl diisocyanate	X	X	X	X	X
Polymethylene polyphenylene isocyanate	X				

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazard 2	Flammability 1	Instability 1	Physical and Chemical Hazards -
<u>HMIS</u>	Health Hazard 2*	Flammability 1	Physical Hazard 1	Personal Protection X

**Indicates a chronic health hazard.*

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General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet