

# Enduraflake Top Coat



## Resin & Hardener

## SDS



**ENDURAFLAKE  
TOP COAT  
PART A  
ISOCYANATE**

**Safety Data Sheet**

Revision date: 2015/08/14

**EW INDUSTRIES**

Box 336, Imperial, SK Canada S0G 2J0 1-888-799-3960

[www.SierraStone.com](http://www.SierraStone.com)

**1. Identification**

**Product identifier used on the label**

**ENDURAFLAKE TOP COAT - PART A - ISOCYANATE**

**Recommended use of the chemical and restriction on use:**

**Floor Coating**

\* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

**Details of the supplier of the safety data sheet**

Company:

EW Industries  
Box 336  
Imperial, SK Canada S0G 2J0

1-888-799-3960

**Emergency telephone number**

CHEMTREC: 1-800-424-9300

**Other means of identification**

Chemical family: Modified Aliphatic Isocyanate



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### 2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200

#### Classification of the product

Acute Toxicity	4	(Inhalation - mist)
Skin Sensitization	1	
Specific Target Organ Toxicity – Single Exposure	3	(Irritating to respiratory system)
Aquatic Acute	3	
Eye Damage/Irritation	2a	

Label Elements

Pictogram:



Signal Word: Warning

Hazard Statement:

Flammable  
Harmful if inhaled.  
May cause an allergic skin reaction.  
May cause respiratory irritation.  
Harmful to aquatic life.  
Causes serious eye irritation  
May cause drowsiness or dizziness

Precautionary Statements (Prevention):

Wear eye/face protection.  
Wear protective gloves.  
Use only outdoors or in a well-ventilated area.  
Do not breathe dust/gas/mist/vapors.  
Avoid release to the environment.  
Contaminated work clothing should not be allowed out of the workplace.  
Wash with plenty of water and soap thoroughly after handling  
Keep away from heat, hot surfaces, open flames, sparks – No smoking



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Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical, lighting, ventilating equipment  
Use only non-sparking tools  
Take Precautionary measures against static discharge

### Precautionary Statements (Response):

If eye or skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.  
IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
IF ON SKIN (or hair): Wash with plenty of soap and water.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
Take off contaminated clothing and wash before reuse.  
In case of fire: Use dry chemical powder, alcohol-resistant foam, carbon dioxide (CO<sub>2</sub>) for extinction

### Precautionary Statements (Storage):

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

### Precautionary Statements (Disposal):

Dispose of contents/container to hazardous or special waste collection point.

### Hazards not otherwise classified

No specific dangers known

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

### Emergency overview

#### WARNING:

The product may be toxic to fish and aquatic organisms. Do not release any waste streams to surface water (to rain water ditch, for example).

May cause sensitization by skin contact. HARMFUL IF INHALED.

CONTAINS ISOCYANATES. INHALATION OF ISOCYANATE MISTS OR VAPORS MAY CAUSE RESPIRATORY IRRITATION, BREATHLESSNESS, CHEST DISCOMFORT AND REDUCED PULMONARY FUNCTION. OVEREXPOSURE WELL ABOVE THE PEL MAY RESULT IN BRONCHITIS, BRONCHIAL SPASMS AND PULMONARY EDEMA. LONG-TERM EXPOSURE TO ISOCYANATES HAS BEEN REPORTED TO CAUSE LUNG DAMAGE, INCLUDING REDUCED LUNG FUNCTION WHICH MAY BE PERMANENT. ACUTE OR CHRONIC OVEREXPOSURE TO ISOCYANATES MAY CAUSE SENSITIZATION IN SOME INDIVIDUALS, RESULTING IN ALLERGIC RESPIRATORY REACTIONS INCLUDING WHEEZING, SHORTNESS OF BREATH AND DIFFICULTY BREATHING. ANIMAL TESTS INDICATE THAT SKIN CONTACT MAY PLAY A ROLE IN CAUSING RESPIRATORY SENSITIZATION.

Use with local exhaust ventilation. Wear protective clothing.





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Wear full face shield if splashing hazard exists.

### 3. Composition / Information on Ingredients

Components	CAS Number	Concentration (Weight)
Poly(hexamethylene diisocyanate)	28182-81-2	40-75 %
4-CHLOROBENZOTRIFLUORIDE	98-56-6	15-35 %
Proprietary	Proprietary	< 20 %

### 4. First-Aid Measures

#### Description of first aid measures

##### General advice:

Immediately remove contaminated clothing.

##### If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

##### If on skin:

Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.

##### If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Seek medical attention.

##### If swallowed:

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

##### Most important symptoms and effects, both acute and delayed:

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.



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### Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary edema.

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## 5. Fire-Fighting Measures

### **Extinguishing media**

Suitable extinguishing media: Preferable: Alcohol resistant foam. Water spray, CO2

Unsuitable extinguishing media: Solid water jet ineffective as extinguishing medium

### **Special hazards arising from the substance or mixture**

Hazards during firefighting: harmful vapors

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

### **Advice for firefighters**

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### **Further information:**

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

### **Fire Hazard:**

Highly flammable. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard. Reactions involving a fire hazard: see "Reactivity Hazard"

### **Explosion Hazard:**

DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. Heat may cause pressure rise in tanks/drums: explosion risk. May be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".

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## 6. Accidental release measures

### **Personal precautions, protective equipment and emergency procedures**

Use personal protective clothing.

### **Environmental precautions**

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.



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### Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

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## 7. Handling and Storage

### Precautions for safe handling

Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark/explosion proof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Avoid prolonged and repeated contact with skin. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

### Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place away from heat sources, direct sunlight.

#### Storage stability:

If moisture enters isocyanate containers, CO<sub>2</sub> forms and pressure builds up.

Storage Temperature: 15 – 20 C

#### Storage Area:

Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. Meet the legal requirements.

#### Special rules on packaging:

SPECIAL REQUIREMENTS: Closing with pressure relief valve: clean, opaque, correctly labelled, meet the legal requirements. Secure fragile packagings in solid containers.

#### Packaging materials:

SUITABLE MATERIAL: steel, stainless steel, carbon steel, aluminium, iron, copper, nickel, bronze, glass. MATERIAL TO AVOID: synthetic material

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## 8. Exposure Controls/Personal Protection



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### Engineering Measures

Provide readily accessible eye wash stations and safety showers.  
Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits

### Personal protective equipment

#### Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapor/particulate respirator. Do not exceed the maximum use concentration for the respirator face piece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full face piece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

#### Hand protection:

Chemical resistant protective gloves

#### Eye protection:

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists

#### General safety and hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid inhalation of mists. Contact with eyes and skin must be avoided.

#### Occupational Exposure limit(s)

Benzene, 1-chloro-4 (trifluoromethyl)	Time Weighted Average (TWA): 8 hr	25 ppm
1, 6 – hexamethylene diisocyanate	Time Weighted Average (TWA): ACGIH TLV	0.005 ppm

## 9. Physical and Chemical Properties

Form:	Liquid
Odor:	Aromatic, fruity
Color:	Clear to yellow
pH value:	N/A
Melting point:	No data available
Boiling point:	139 °C
Flash point:	45 °C





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Flammability:	Combustible
Lower explosion limit:	Not applicable
Upper explosion limit:	Not applicable
Vapor pressure:	N/A
Density:	N/A
Viscosity, Dynamic	800-1500 CPS
Solubility in Water	Hydrolyzes
Evaporation rate:	Not determined
Volatile Organic Compounds:	< 5 g/l (per AQMD)

### 10. Stability and Reactivity

#### Corrosion to metals:

Corrosion effect on metals are not anticipated

#### Chemical Stability:

Stable under normal conditions.

#### Conditions to avoid:

Avoid moisture. Avoid sources of ignition. Oxidizers

#### Materials to avoid:

Water, Alcohols, Amines

#### Hazardous decomposition products:

Chlorine and fluorine containing gases can be produced.

#### Possibility of hazardous Reactions/Reactivity:

Reacts with alcohols. Reacts with amines. Reacts with substances which contain active hydrogen. Reacts with water, with formation of carbon dioxide. The formation of gaseous decomposition products builds up pressure in tightly closed containers.

### 11. Toxicological information

#### Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact.

Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

#### Acute Toxicity/Effects



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### Acute toxicity

Assessment of acute toxicity: Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact. Of moderate toxicity after short-term inhalation.

### Oral

Type of value: LD50

Species: rat

Value: > 5,000 mg/kg

### Inhalation

Type of value: LC50 Species: rat

Value: (OECD Guideline 403) Exposure time: 4 h

The test result applies only to the substance transferred into respirable aerosol (particles < 20 µm).

### Dermal

Type of value: LD50 Species: rat

No data available.

### Irritation / corrosion

Assessment of irritating effects: Not irritating to eyes and skin. Irritating to respiratory system.

### Skin

Species: rabbit Result: non-irritant

Method: OECD Guideline 404

### Eye

Species: rabbit Result: non-irritant

### Sensitization

Assessment of sensitization: Caused skin sensitization in animal studies.

Guinea pig maximization test Species: guinea pig

Result: sensitizing

Sensitizing effect in animal tests

### Aspiration Hazard

No aspiration hazard expected.

### Chronic Toxicity/Effects



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### Repeated dose toxicity

Assessment of repeated dose toxicity: Based on available data, the classification criteria are not met.

### Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

## 12. Ecological Information

### Toxicity

#### Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

#### Toxicity to fish

LC0 (96 h)  $\geq$  100 mg/l, Brachydanio rerio (OECD 203; ISO 7346; 92/69/EEC, C.1, static)

The product may hydrolyse. The test result may be partially due to degradation products. The product has low solubility in the test medium. An eluate has been tested. Limit concentration test only (LIMIT test). The details of the toxic effect relate to the nominal concentration.

#### Aquatic invertebrates

EC0 (48 h)  $\geq$  100 mg/l, Daphnia magna (Directive 92/69/EEC, C.2, static)

The product may hydrolyse. The test result may be partially due to degradation products. The product has low solubility in the test medium. An eluate has been tested. Limit concentration test only (LIMIT test). The details of the toxic effect relate to the nominal concentration.

#### Aquatic plants

EL50 (72 h)  $>$  100 mg/l (growth rate), Desmodium subspicatus (OECD Guideline 201, static)

The product may hydrolyse. The test result may be partially due to degradation products. The product has low solubility in the test medium. An eluate has been tested. The details of the toxic effect relate to the nominal concentration.

#### Chronic toxicity to fish

Study does not need to be conducted.

#### Chronic toxicity to aquatic invertebrates

Study does not need to be conducted.

#### Assessment of terrestrial toxicity



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Study does not need to be conducted.

### Microorganisms/Effect on activated sludge

#### Toxicity to microorganisms

OECD Guideline 209 static

Activated sludge, domestic/EC20 (3 h): 134.5 mg/l

The product may hydrolyse. The test result may be partially due to degradation products. The details of the toxic effect relate to the nominal concentration.

### Persistence and degradability

#### Assessment biodegradation and elimination (H2O)

Not readily biodegradable (by OECD criteria). The product is unstable in water. The elimination data also refer to products of hydrolysis.

#### Elimination information

1 % BOD of the ThOD (28 d) (OECD 301D; EEC 92/69, C.4-E) (aerobic, activated sludge, domestic, non-adapted)

#### Assessment of stability in water

In contact with water the substance will hydrolyze rapidly.

#### Information on Stability in Water (Hydrolysis)

Study does not need to be conducted.

### Bioaccumulative Potential

#### Assessment bioaccumulation potential

Does not significantly accumulate in organisms.

#### Bioaccumulation potential

Study scientifically not justified.

### Mobility in soil

#### Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

### Additional information

Additional Remarks Environment Fate & Pathway:





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Treatment in biological waste water treatment plants has to be performed according to local and administrative regulations.

Other Ecotoxicological advice:

Do not release untreated into natural waters. The local regulations on waste-water treatment must be followed.

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### 13. Disposal Considerations

Dispose of in a licensed facility. Do not discharge into waterways or sewer systems without proper authorization.

**Container disposal:**

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

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### 14. Transport Information

**Land transport**

USDOT

Proper Shipping Name:	Resin Solution
Hazard Class or Division:	3
UN/NA Number:	1866
Packaging Group:	III
Hazard Label(s):	Warning, Flammable Liquid
Hazard Placards(s):	Flammable

**Sea transport**

IMDG

Proper Shipping Name:	Resin Solution
Hazard Class or Division:	3
UN/NA Number:	1866
Packaging Group:	III
Hazard Label(s):	Warning, Flammable Liquid
Hazard Placards(s):	Flammable

**Air transport**

IATA/ICAO

Proper Shipping Name:	Resin Solution
Hazard Class or Division:	3
UN/NA Number:	1866
Packaging Group:	III



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Hazard Label(s): Warning, Flammable Liquid  
Hazard Placards(s): Flammable

### 15. Regulatory Information

#### Federal Regulations:

Chemical: TSCA, US - Released/Listed

Regulation	CAS Number	Chemical Name
MA, NJ	822-06-0	1, 6-hexamethylene diisocyanate
PA, NJ	98-56-6	4-Chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene

CA Prop 65: THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER

### 16. Other Information

#### NFPA Hazard Codes:

Health : 2  
Fire : 2  
Reactivity : 1  
Special : 0

#### SDS Prepared by:

EW Industries Ltd.

The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication as part of EW Industries Ltd's Product Safety Program. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information obtained herein. Data sheets are available for all EW Industries products. You are urged to obtain data sheets for all EW Industries' products you buy, process, use or distribute and you are encouraged and requested to advise those who may come in contact with such products of the information contained therein.

To determine applicability or effects of any law or regulation with respect to the product, user should consult his legal advisor or the appropriate government agency. EW Industries does not undertake to furnish advice on such matters.





**ENDURAFLAKE  
TOP COAT  
PART B  
RESIN**

## **Safety Data Sheet**

Revision date: 2015/10/07

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### **EW INDUSTRIES**

Box 336, Imperial, SK Canada S0G 2J0 1-888-799-3960

[www.SierraStone.com](http://www.SierraStone.com)

#### **1. Identification**

**Product identifier used on the label**

**ENDURAFLAKE TOP COAT - PART B - RESIN**

**Recommended use of the chemical and restriction on use:**

**Industrial Maintenance Coating, Floor Coating, Waterproofing/Concrete Masonry Sealer**

\* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

**Details of the supplier of the safety data sheet**

Company:  
EW Industries Ltd  
Box 336  
Imperial, SK Canada  
S0G 2J0

1-888-799-3960

**Emergency telephone number: CHEMTREC: 1-800-424-9300**

**Other means of identification**

Chemical family: Modified Aspartic Ester

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#### **2. Hazards Identification**

**According to Regulation 2012 OSHA Hazard Communication Standard: 29 CFR Part 1910.1200**





# ENDURAFLAKE TOP COAT PART B RESIN

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### Classification of the product

Serious Eye Damage: Category 1  
Skin Corrosive: Category 1  
Skin Sensitization: Category 1  
Specific Target Organ Toxicity, Single Exposure, Category 3  
Specific Target Organ Toxicity, Repeated Exposure – Category 2  
Hazardous to the aquatic environment, short term, acute, Category 3  
Hazardous to the aquatic environment, long term, acute, Category 3  
Flammable Liquid: Category 3

### Label Elements

#### Pictogram:



Signal Word: Danger

### Hazard Statement:

Flammable liquid and vapor. May cause drowsiness or dizziness. May cause damage to organs through prolonged or repeated exposure.  
May cause allergic skin reaction.  
Causes severe skin burns and eye damage.  
Toxic to aquatic life with long lasting effects.

### Precautionary Statements:

Keep away from heat/sparks/open flames/hot surfaces. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion proof electrical/ventilating/lighting. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/eye protection/face protection. Do not breathe vapor/fumes/spray. Get medical attention if you feel unwell. Use only outdoors or in a well-ventilated area. Do not breathe vapors, mist, or spray. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.  
IN CASE OF FIRE: Use foam, carbon dioxide, water fog, or spray to extinguish.  
IF SWALLOWED: Rinse mouth. Do not induce vomiting.  
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rise skin with water/shower.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.



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Immediately call a POISON CENTER or doctor/physician.  
If skin irritation or rash occurs: Get medical advice/attention.  
Store in a well-ventilated place. Store locked up.  
Dispose of contents/container in accordance with Local, State, Federal, and Provincial regulations.

### Emergency Overview:

**DANGER!** Flammable. Corrosive. Harmful if inhaled or swallowed. Irritant.

### Route of Exposure:

Eyes. Skin. Respiratory system. Digestive System.

### Potential Health Effects:

**Eye:** Corrosive. Will cause eye burns, permanent tissue damage, and blindness.

**Skin:** Contact causes severe skin irritation and possible burns. May cause permanent skin damage. Allergic reactions are possible.

May cause skin sensitization, an allergic reaction, which becomes evident on reexposure to this material.

**Inhalation:** May cause severe respiratory system irritation. May cause respiratory sensitization with asthma-like symptoms in susceptible individuals.

**Ingestion:** Harmful if swallowed. Corrosive to gastrointestinal tract.

### Chronic Health Effects:

Prolonged skin contact causes burns. Repeated or prolonged inhalation may cause toxic effects.

### Target Organs:

Eyes. Skin. Respiratory system. Digestive system.

### Aggravation of Pre-Existing Conditions:

Individuals with pre-existing skin disorders, asthma, allergies, or known sensitization may be more susceptible to the effects of this product.

## 3. Composition / Information on Ingredients

Components	CAS Number	Concentration (Weight)
Aspartic Ester	1136210-32-7	< 50 %
Aspartic Ester	1136210-30-5	< 30 %
Alimine	54914-37-3	< 30 %
Benzene, 1-Chloro-4 (Trifluoromethyl)	98-56-6	< 30 %
Proprietary	Proprietary	< 20 %



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### 4. First-Aid Measures

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#### Description of first aid measures

**General advice:**

Immediately remove contaminated clothing.

**If inhaled:**

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

**If on skin:**

Wash affected areas thoroughly with soap and water. Immediately remove contaminated clothing and shoes. Wash clothing before reuse. If irritation develops, seek medical attention.

**If in eyes:**

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Seek medical attention if irritation develops. Use fingers to ensure that eyelids are separated and that the eye is being irrigated.

**If swallowed:**

Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

**Most important symptoms and effects, both acute and delayed:**

Acute: May cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash. May cause skin irritation with symptoms of reddening, itching, and swelling. May cause eye irritation with symptoms of reddening, tearing, stinging, and swelling.

**Potential health effects:**

Routes of entry: Ingestion, inhalation, skin, eyes.

Target organs: Central Nervous System, kidneys, liver.

Irritancy: May be irritating to eyes, skin and respiratory tract .

Sensitizing capability: None known.

Reproductive effects: None known.

Cancer information: This product does not contain any substances at > 0.1 weight % that are considered by OSHA, NTP, IARC or AGCIH to be "probable" or "suspected" carcinogens.





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### Short term exposure (acute):

Inhalation: Irritating to mucous membranes.

Eyes: Liquid is a severe eye irritant and can cause burns.

Skin: May cause burns.

Ingestion: May cause burns to gastrointestinal tract. May be harmful by ingestion.

### Repeated exposure (chronic):

Prolonged or repeated breathing or swallowing of large amounts may cause liver and kidney damage based on animal studies.

See Inhalation and Ingestion.

Synergistic materials: None known.

Medical conditions aggravated by exposure: None known.

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## 5. Fire-Fighting Measures

### Extinguishing media

Suitable extinguishing media: Preferable: Alcohol resistant foam. Dry chemical, Water spray, CO2.

Unsuitable extinguishing media: Solid water jet ineffective as extinguishing medium.

### Special hazards arising from the substance or mixture

Hazards during fire-fighting: harmful vapors.

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire.

### Advice for fire-fighters

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Evacuate all unnecessary personnel. Shut down motors, pumps, electrical service and eliminate all sources of ignition. Use water spray to keep fire exposed containers cool to avoid pressure buildup. Wear NIOSH/MSHA approved positive pressure self-contained breathing apparatus and full protective clothing.

### Further information:

The degree of risk is governed by the burning substance and the fire conditions. Contaminated extinguishing water must be disposed of in accordance with official regulations.

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## 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors





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can accumulate in low areas.

### Environmental precautions

Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

### Methods and material for containment and cleaning up

Spills should be contained, solidified, and placed in suitable containers for disposal.

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## 7. Handling and Storage

### General information on handling:

Do not taste or swallow.

Do not get in eyes, on skin, or on clothing.

Do not breathe vapor or mist. Wear NIOSH/MSHA approved respiratory protection if there is potential for exposure above the exposure limits.

Keep away from heat, sparks, pilot lights, welding operations, and open flame.

No smoking.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Check that all equipment is properly grounded and installed to satisfy electrical classification requirements.

Container hazardous when empty.

Follow label warnings even after container is emptied.

RESIDUAL VAPORS MAY EXPLODE ON IGNITION.

DO NOT CUT, DRILL, GRIND, OR WELD ON OR NEAR THIS CONTAINER.

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

Emptied container retains vapor and product residue.

### Conditions for safe storage, including any incompatibilities

Further information on storage conditions: Keep container tightly closed and dry; store in a cool place away from heat sources, direct sunlight.

Storage stability:

May react with oxygen to form peroxides.

Storage Incompatibility – General.

Store separate from:

Strong Acids, Strong Oxidizing Agents, Strong Bases, Reducing Agents.



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Storage Temperature: 10 – 30 C

Storage Area:

Store in a cool area. Keep out of direct sunlight. Store in a dry area. Store in a dark area.

Packaging materials:

SUITABLE MATERIAL: steel, stainless steel, carbon steel, aluminum, iron, copper, nickel, bronze, glass.

MATERIAL TO AVOID: synthetic material.

### 8. Exposure Controls/Personal Protection

#### Exposure Limits

Component	Weight Percent	OSHA	ACGIH TLV	Corporate Exposure Limit (CEL)
Benzene, 1-Chloro-4 (Trifluoromethyl)	< 30%	None Established	None Established	25 ppm – 8 hr TWA

#### Engineering Measures

Provide readily accessible eye wash stations and safety showers.

General room ventilation plus local exhaust at points of emission should be used to maintain levels of airborne contaminants as low as feasibly possible and below exposure limits.

#### Personal protective equipment

##### **Respiratory protection:**

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapor/particulate respirator. Do not exceed the maximum use concentration for the respirator face piece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full face piece pressure demand self-contained breathing apparatus (SCBA) or a full face piece pressure demand supplied-air respirator (SAR) with escape provisions.

##### **Hand protection:**

Chemical resistant protective gloves.

##### **Eye protection:**

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

##### **General safety and hygiene measures:**



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Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid inhalation of mists. Contact with eyes and skin must be avoided.

### 9. Physical and Chemical Properties

Form:	liquid
Odor:	Sweet naphthalenic odor
Color:	Clear-Amber, Cloudy
pH value:	N/A
Melting point:	No data available
Boiling point:	145°C (estimated)
Flash point:	45°C (estimated)
Flammability:	No data available
Lower explosion limit:	Not applicable
Upper explosion limit:	Not applicable
Vapor pressure:	Not applicable
Density:	1.05 g/cm <sup>3</sup> at 20 °C
Viscosity, Dynamic	700 CPS
Solubility in Water	Hydrolyzes
Evaporation rate:	Not determined
Volatile Organic Compounds:	< 5 g/l (per AQMD)

### 10. Stability and Reactivity

#### Chemical Stability:

This is not a stable product. It reacts with moist air.

#### Conditions to avoid:

Avoid moisture. Avoid sources of ignition.

#### Materials to avoid:

Strong Acids  
Strong Oxidizing Agents  
Strong Bases  
Reducing Agents  
May react with oxygen to form peroxides.

Hazardous decomposition products:





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Thermal decomposition giving flammable and toxic products:  
Carbon oxides  
Hazardous organic compounds  
Isophorone diamine  
Isobutyraldehyde

### 11. Toxicological information

For Aspartic Ester:

Likely Routes of Exposure: Skin Contact, Eye Contact, Inhalation, Ingestion

Health Effects and Symptoms:

Acute: May cause allergic skin reaction with symptoms of reddening, itching, swelling, and rash. May cause skin irritation with symptoms of reddening, itching, and swelling. May cause eye irritations with symptoms of reddening, tearing, stinging, and swelling.

Chronic: Not expected to cause adverse chronic health effects.

Acute Oral Toxicity:

Acute toxicity estimate: > 5000 mg/kg (calculation method)

LD 50 > 2000 mg/kg (rat) (Directive 67/548/EEC, Annex V, B.1.)

Acute Inhalation Toxicity: LC 50 ? 4.224 mg/l, 4 h (rat, male/female) (OECD Test Guideline 403)

Acute Dermal Toxicity: LD50 ? 2000 mg/kg (rat, male/female) (Directive 67/548/EEC, Annex V, B.3.)

Skin Irritation: rabbit, OECD Test Guideline 404, slight irritant

Eye Irritation: rabbit, OECD Test Guideline 405, non-irritating

Sensitization: Skin sensitization according to Magnusson/Kligmann (maximizing test): In the guinea pig, the product has a sensitizing effect (OECD Test Guideline 406)

Maximization Test (GPMT): sensitizer (Guinea pig, OECD Test Guideline 406)

Repeated Dose Toxicity: 29 days, oral: NOAEL: 1,000 mg/kg (Rat, Male/Female, daily)

Mutagenicity: Genetic toxicity in vitro: Ames: negative (salmonella typhimurium, metabolic activation: with/without)

Genetic toxicity in vivo: Micronucleus test: negative (Mouse, Male/Female, intraperitoneal)

Toxicity to Reproduction/Fertility: Two generation study, oral, daily, (Rat, Male/Female) NOAEL (parental): 1,000 mg/kg. NOAEL (F1): 1,000 mg/kg, NOAEL (F2): 1,000 mg/kg

Developmental Toxicity/Teratogenicity: Rat, Female, oral, NOAEL (teratogenicity): 1,000 mg/kg, NOAEL (maternal): 1,000 mg/kg

For Benzene, 1-Chloro-4 (Trifluoromethyl):

Acute toxicity

LD50 Oral – Rat – 13,000 mg/kg

LD50 Oral – Rat – 5,546 mg/kg





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LC50 Inhalation – Rat - 4 h - > 32.03 mg/l

LD50 Dermal – Rabbit - > 3,300 mg/kg

No data available

### Skin corrosion/irritation

Skin – Rabbit Result: No skin irritation

### Serious eye damage/eye irritation

Eyes – Rabbit Result: No eye irritation

### Respiratory or skin sensitisation

in vivo assay - Mouse

May cause sensitisation by skin contact.(OECD Test Guideline 429)

### Germ cell mutagenicity

Ames test: Salmonella typhimurium

Result: Not mutagenic in Ames Test

### Chromosome aberration test in vitro

Chinese hamster ovary cells

Result: negative

### Carcinogenicity

Carcinogenicity: No carcinogenic substances as defined by IARC, NTP, and/or OSHA

## 12. Ecological Information

### Ecological Data for Aspartic Ester:

#### Acute toxicity to aquatic invertebrates

NOEC (reproduction): 0.013 mg/l (Daphnia magna (Water Flea), 21 d)

NOEC (mortality): 0.12 mg/l (Daphnia magna (Water Flea), 21 d)

Toxicity to Aquatic Plants: EC50: 113 mg/l (Green Algae (Scenedesmus subspicatus), 72 h)

Additional Ecotoxicological Remarks: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### Ecological Data for Benzene, 1-Chloro-4 (Trifluoromethyl):

#### Toxicity:

Toxicity to fish	Semi-static test LC-50 – Danio rerio (Zebra Fish) – 3 mg/l – 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	EC 50 – Daphnia magna (Water Flea) – 2 mg/l – 48 h (OECD Test Guideline 202)
Toxicity to algae	NOEC – Pseudokirchneriella subcapitata (Green Algae) – 0.41 mg/l – 72 h (OECD Test Guideline 201)



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Biodegradability	Result: - According to the results of tests of biodegradability this product is not readily biodegradable. (OECD Test Guideline 301D)
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Other Adverse Effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life with long lasting effects

### 13. Disposal Considerations

Dispose of in a licensed facility. Do not discharge into waterways or sewer systems without proper authorization.

**Container disposal:**

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

### 14. Transport Information

**Land transport**

USDOT

Proper Shipping Name: Amines, Flammable, Corrosive, N.O.S.. or Polyamines, Flammable, Corrosive, N.O.S.  
Hazard Class or Division: 3  
UN/NA Number: 2733  
Packaging Group: III  
Hazard Label(s): Warning, Flammable Liquid, Corrosive Liquid  
Hazard Placards(s): Flammable, Corrosive  
Limited Quantity: < 5 L

**Sea transport**

IMDG

Proper Shipping Name: Amines, Flammable, Corrosive, N.O.S.. or Polyamines, Flammable, Corrosive, N.O.S. – Marine Pollutant  
Hazard Class or Division: 3  
UN/NA Number: 2733  
Packaging Group: III  
Hazard Label(s): Warning, Flammable Liquid, Corrosive Liquid, Marine Pollutant  
Hazard Placards(s): Flammable, Corrosive, Marine Pollutant

**Air transport**

IATA/ICAO

Proper Shipping Name: Amines, Flammable, Corrosive, N.O.S.. or Polyamines, Flammable, Corrosive, N.O.S. – Marine Pollutant



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Hazard Class or Division: 3  
UN/NA Number: 2733  
Packaging Group: III  
Hazard Label(s): Warning, Flammable Liquid, Corrosive Liquid, Marine Pollutant  
Hazard Placards(s): Flammable, Corrosive, Marine Pollutant

### 15. Regulatory Information

EU, EINECS	EINECS	Does not conform
United States TSCA Inventory	TSCA	Listed

#### United States – Federal Regulations

**SARA Title III – Section 302 Extremely Hazardous Chemicals:**  
None

**SARA Title III - Section 311/312 Hazard Categories:**  
Acute Health Hazard

**SARA Title III – Section 313 Toxic Chemicals:**  
None

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – Reportable Quantity (RQ):**  
None

#### United States – State Regulations

**Massachusetts, New Jersey, or Pennsylvania Right to Know**

Chemical Name	CAS-No.
Aspartic Ester	136210-32-7
Aliphatic Carboxylic Ester	623-91-6
4-Chloro- $\alpha,\alpha,\alpha$ -trifluorotoluene	98-56-6

#### California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects

### 16. Other Information

NFPA Hazard Codes:

Health	:	2
Fire	:	2
Reactivity	:	1
Special	:	0



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**SDS Prepared by:**  
EW Industries Ltd

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