



Material Safety Data Sheet (WHMIS)

**SECTION I: PRODUCT INFORMATION**

<b>MANUFACTURER/SUPPLIER:</b> Goodrich De-icing & Specialty Systems 1555 Corporate Woods Parkway Uniontown, Ohio (USA) 44685	<b>PRODUCT IDENTIFIER:</b> 0165TS38 PART A  <b>PRODUCT USE:</b> Coating/Sealer
<b>TELEPHONE:</b> Emergency: 1-800-424-9300 Information: (330) 374-4011	<b>PRODUCT IDENTIFICATION NO.:</b> 74-451-158, 74-451-160 (Kit: 74-45-1-Q)  <b>REV. DATE:</b> 02-09-07

**SECTION II: HAZARDOUS INGREDIENTS**

MATERIAL OR COMPONENT <sup>1</sup>	CAS NUMBER	WEIGHT (%)	OSHA PEL	ACGIH TLV	LD <sub>50</sub> (RAT)	LC <sub>50</sub> (RAT)
Aluminum <sup>2</sup>	7429-90-5	<25%	15 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>	N/A	N/A
Diisodecyl Phthalate (DIDP)	68515-49-1	<15	N/A	N/A	N/A	N/A
Dicyclohexylmethane -4,4-Diisocyanate <sup>2</sup>	5124-30-1	<10%	0.01 ppm ceiling	0.005 ppm	> 9.9 g/kg	N/A

<sup>1</sup> All components are listed on TSCA Inventory, Canadian DSL list and European Union EINECS or are not required to be listed.  
<sup>2</sup> Chemicals listed under Section 313 of Title 3 of SARA.

**SECTION III: PHYSICAL DATA**

BOILING POINT (°F)	N/A	SPECIFIC GRAVITY	1.19
VAPOR PRESSURE (mmHg @ 25°C)	~ 0.001	% VOLATILE BY WEIGHT	NEGLECTIBLE
VAPOR DENSITY (AIR = 1)	N/A	EVAPORATION RATE (BUTYL ACETATE = 1)	NEGLECTIBLE
SOLUBILITY IN WATER (20°C)	Reacts with Water	FREEZING POINT (°F)	N/A
ODOR THRESHOLD	N/A	COEFFICIENT OF WATER/OIL DISTRIBUTION	N/A
PHYSICAL STATE (pH = N/A)	Liquid	ODOR AND APPEARANCE	Silver viscous liquid, No odor

**SECTION IV: FIRE AND EXPLOSION DATA**

FLASH POINT (METHOD):	>212°F (TCC)	FLAMMABLE LIMITS IN AIR	% BY VOLUME
		LEL: N/A	UEL: N/A

EXTINGUISHING MEDIA:	Do not use halogenated extinguishing agents or water due to aluminum content. Ring small fire with dry sand using non-sparking shovels, eliminate drafts. Let fire extinguish self.		
SPECIAL FIRE FIGHTING PROCEDURES:	Use full emergency equipment with self-contained breathing apparatus.		
HAZARDOUS COMPOSITION PRODUCTS:	Toxic gases may be present as a result of thermal decomposition or combustion. Closed containers may explode when exposed to extreme heat. Use cold water to reduce risk of rupture. Closed containers may also burst if contaminated with water due to CO <sub>2</sub> evolved. Aluminum can react with some acids and caustic solutions to produce explosive hydrogen.		
FLAMMABILITY:	N/A	AUTO-IGNITION TEMPERATURE:	N/A
EXPLOSION - SENSITIVITY TO IMPACT:	N/A	EXPLOSION - SENSITIVITY TO STATIC DISCHARGE:	N/A

### SECTION V: REACTIVITY DATA

CHEMICAL STABILITY:	STABLE	CONDITIONS TO AVOID:	CONTACT WITH WATER; HEAT
INCOMPATIBILITY:	Water, Amines, Strong Bases, Alcohols, Metal Compounds, Surface Active Agents, Mineral Acids		
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of Carbon and Nitrogen; HCN; HMDI		
REACTIVITY:	Reactive with Water	CONDITIONS TO AVOID:	May react with moisture and other materials that react with isocyanates. Elevated temperatures may cause polymerization.

### SECTION VI: TOXICOLOGICAL PROPERTIES

ROUTES OF ENTRY:	Dermal; Inhalation
ACUTE EFFECTS (SHORT OR SINGLE EXPOSURE):	<ul style="list-style-type: none"> <li>- EYE CONTACT: May cause irritation.</li> <li>- INGESTION: May cause irritation and/or corrosive action in the mouth, stomach and digestive tracts.</li> <li>- SKIN CONTACT: Material is a primary skin irritant and potential skin sensitizer. Experience indicates that direct skin contact is the route of exposure most likely to cause sensitization.</li> <li>- INHALATION: May cause allergic respiratory reaction and/or irritation to the respiratory tract and eyes.</li> </ul>
CHRONIC EFFECTS OF OVEREXPOSURE:	<ul style="list-style-type: none"> <li>- May produce dermal and pulmonary sensitization effects with subsequent asthmatic or skin reaction on the least contact. Contains material which may cause respiratory system damage.</li> </ul>

EXPOSURE LIMITS:	- TWA: N/A - STEL: N/A - See limits for Hazardous Ingredients on page 1.
IRRITANCY OF PRODUCT:	May cause skin, eyes, gastrointestinal and respiratory tract irritation.
SENSITIZING CAPABILITY OF PRODUCT:	Skin and Pulmonary sensitizer.
CARCINOGENICITY:	None Known.
TERATOGENICITY AND EMBRYOTOXICITY:	N/A.
REPRODUCTIVE TOXICITY:	N/A
MUTAGENICITY:	N/A
SYNERGISTIC MATERIALS:	N/A

### SECTION VII: PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT:	- GLOVES: Chemical Resistant gloves if contact (especially prolonged or repeated) is likely - RESPIRATORY: A NIOSH/MSHA approved respirator for isocyanates may be necessary. Follow provisions of 29CFR 1910.134. Consider type of application and environmental concentrations. When concentrations are not known, if TLV is exceeded, if use is in poorly ventilated confined area, or if material is heated or aerosolized the use of positive pressure respirator or self-contained breathing apparatus is mandatory. - EYE PROTECTION: Safety Glasses with side shields or Goggles. Contact lenses should not be worn. - FOOTWEAR: N/A - CLOTHING: Appropriate to prevent eye and skin contact. Cover as much of exposed skin area as possible with appropriate clothing. - OTHER: Have eyewash and safety shower in area.
ENGINEERING CONTROLS:	Provide Exhaust ventilation if material is heated or aerosolized. For spray application an air-supplied respirator must be worn. Ventilation should be in accordance with ACGIH Industrial Ventilation Manual.

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LEAK AND SPILL PROCEDURES:	Use proper protective equipment. Evacuate Non-Essential personnel. Ventilate the area. Dike or impound spilled material and control further spillage if feasible. Notify appropriate authorities if necessary. Cover spill with sawdust, vermiculite, Fuller's Earth or other absorbent material; pour liquid decontaminant over spillage - allow to react at least ten minutes, collect material in open containers - and further amounts of decontaminant solution. Remove containers to safe place - cover loosely. Wash down area with decontaminant and flush area with water. Decontamination solutions: Ammonium Hydroxide (0-10%), Detergent (2-5%) and balance water; or solution of Union Carbide's Tergitol TMN-10(20%) and water (80%).
WASTE DISPOSAL:	Dispose of product and contaminated materials in accordance with applicable Federal, State, and Local regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. Decontaminate containers prior to disposal. Do not heat or cut empty containers with electric or gas torch.
HANDLING PROCEDURES AND EQUIPMENT:	<p><b>In addition to any precautions listed, you should consult your occupational safety and health specialist to ensure that the suggested procedures will be adequate and in compliance with applicable laws and regulations.</b></p> <ul style="list-style-type: none"><li>- Use only in well ventilated area and avoid breathing vapors, fume or mist.</li><li>- Avoid skin and eye contact (especially prolonged or repeated contact).</li><li>- Wash thoroughly with soap and water after handling material.</li><li>- Keep out of the reach of children.</li></ul>
STORAGE REQUIREMENTS:	- Store between 32°F and 122°F. Store in tightly closed container; protect from moisture and contamination. Keep away from heat, sparks, open flame.
SPECIAL SHIPPING INFORMATION:	<p><b>DOT CLASSIFICATION:</b></p> <p>Proper Shipping Name: Aviation regulated liquid, n.o.s. Hazard Class: 9 UN/ID Number: UN3334 Technical Name (n.o.s.): Contains methylene bis(4-cyclohexylisocyanate)</p> <p><b>IATA:</b> Proper Shipping Name: Aviation regulated liquid, n.o.s. Hazard Class: 9 UN/ID Number: UN3334 Technical Name (n.o.s.): Contains methylene bis(4-cyclohexylisocyanate)</p> <p>Note: This shipping information is supplied as basic guidance only. The size of the packaging may affect the classifications. Refer to appropriate transportation regulations for specific requirements.</p>
HMIS RATING:	H-2, F-1, R-1

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**SECTION VIII: FIRST AID MEASURES**

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**EYES:** Flush eyes with plenty of water for at least 15 minutes (holding eyelids open), longer if there are indications of residual material in eye. Obtain Medical attention.

**SKIN:** Remove contaminated clothing and laundry before reuse. Remove contaminated shoes. Wash affected area with soap and water.

**INHALATION:** Move to an area free from risk of further exposure. Administer oxygen or artificial respiration as needed. Obtain medical attention. Asthmatic-type symptoms may develop and may be immediate or delayed up to several hours. Treatment is essentially symptomatic. \*\*Note to Physician: Medical supervision of all employees who handle or come in contact with isocyanate is recommended. These should include pre-employment and periodic medical examinations with respiratory function tests (FEV<sub>1</sub>, FVC as a minimum). Persons with asthmatic-type conditions, chronic bronchitis, other chronic respiratory diseases or recurrent skin eczema or sensitization should be excluded from working with isocyanate. Once a person is diagnosed as sensitized to isocyanate, no further exposure can be permitted.

**INGESTION:** Do not induce vomiting. Call a physician at once.

**NOTE: Never give anything by mouth to an unconscious person.**

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**SECTION IX: PREPARATION INFORMATION**

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PREPARED BY: Terry Sluss  
TITLE: Advanced Product Chemist  
TELEPHONE: (330)374-4011  
ORIGINAL DATE: 04-01-04  
REV. DATE: 02-09-07

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Material Safety Data Sheet (WHMIS)

**SECTION I: PRODUCT INFORMATION**

MANUFACTURER/SUPPLIER:

Goodrich De-icing & Specialty Systems  
1555 Corporate Woods Parkway  
Uniontown, Ohio (USA) 44685

PRODUCT IDENTIFIER:

0165TS38 PART B

PRODUCT USE:

Coating/Sealer

TELEPHONE:

Emergency: 1-800-424-9300  
Information: (330)374-4011

PRODUCT IDENTIFICATION NO.:

74-451-159, 74-451-161  
(Kit: 74-451-Q)

REV. DATE: 02-09-07

**SECTION II: HAZARDOUS INGREDIENTS**

MATERIAL OR COMPONENT	CAS NUMBER	WEIGHT (%)	OSHA PEL	ACGIH TLV	LD <sub>50</sub> (RAT)	LC <sub>50</sub> (RAT)
Aluminum <sup>1</sup>	7429-90-5	20-50	N/A	5.1 mg/m <sup>3</sup>	N/A	N/A
Diisodecyl Phthalate (DIDP)	68515-49-1	<25	N/A	N/A	N/A	N/A
Diethyltoluene Diamine	68479-98-1	<25	N/A	N/A	>500 mg/kg	>20 mg/l
2-(2'-Hydroxy-3',5'-di-tert-amylphenyl) benzotriazole	25973-55-1	<5	N/A	N/A	>7750 mg/kg (oral)	>0.4 mg/l (4 hr. inhalation)
Methyl-1,2,2,6,6-pentamethyl-4-piperdinyll sebacate	82919-37-7	<5	N/A	N/A	>2000 mg/kg	N/A
Heterocyclic organic	Mixture	<5	N/A	N/A	>2000 mg/kg	N/A

<sup>1</sup> Product is manufactured in compliance with TSCA, components are on the Canadian DSL list and included on the European EINECS or the "No Longer Polymer list" in compliance with Council Directive 67/548/EEC.

<sup>2</sup> Chemicals listed under Section 313

**SECTION III: PHYSICAL DATA**

BOILING POINT (°F)	>100	SPECIFIC GRAVITY	1.33 -1.57
VAPOR PRESSURE (mm Hg)	NEGLECTIBLE	% VOLATILE BY WEIGHT	NEGLECTIBLE
VAPOR DENSITY (AIR = 1)	NEGLECTIBLE	EVAPORATION RATE (BUTYL ACETATE = 1)	NEGLECTIBLE
SOLUBILITY IN WATER (20°C)	SLIGHT	FREEZING POINT (°F)	N/A
ODOR THRESHOLD	N/A	Coefficient of Water/Oil Distribution	N/A
PHYSICAL STATE (pH = N/A)	Paste	ODOR AND APPEARANCE	Silver Colored Paste, Amine

odor

**SECTION IV: FIRE AND EXPLOSION DATA**

FLASH POINT (METHOD):	>200°F (TCC)	FLAMMABLE LIMITS IN AIR	% BY VOLUME
		LEL: N/A	UEL: N/A
EXTINGUISHING MEDIA:	Do <u>not</u> use halogenated extinguishing agents or water due to aluminum content. Ring small fire with dry sand using non-sparking shovels, eliminate drafts. Let fire extinguish self.		
SPECIAL FIRE FIGHTING PROCEDURES:	Do not enter confined fire space without proper protective equipment; including a NIOSH approved self contained breathing apparatus in positive pressure mode and full protective clothing.		
HAZARDOUS COMPOSITION PRODUCTS:	Aluminum can react with some acids and caustic solutions to produce explosive hydrogen.		
FLAMMABILITY:	N/A	AUTO-IGNITION TEMPERATURE:	N/A
EXPLOSION - SENSITIVITY TO IMPACT:	N/A	EXPLOSION - SENSITIVITY TO STATIC DISCHARGE:	N/A

**SECTION V: REACTIVITY DATA**

CHEMICAL STABILITY:	STABLE	CONDITIONS TO AVOID:	STABLE
INCOMPATIBILITY:	Mineral Acids, Harsh Alkalis, Halogenated Compounds. Strong acids, bases, and oxidizing agents.		
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of Carbon and Nitrogen		
REACTIVITY:	Polymerization may occur.	CONDITIONS TO AVOID:	Reacts with isocyanates to form high molecular weight polymers.

**SECTION VI: TOXICOLOGICAL PROPERTIES**

ROUTES OF ENTRY:	Dermal
ACUTE AFFECTS (SHORT OR SINGLE EXPOSURE):	- EYE CONTACT: Liquid and/or vapors may cause moderate irritation. - SKIN CONTACT: May cause mild irritation. May be absorbed through the skin. - INHALATION: May cause mild irritation to the respiratory tract.
CHRONIC AFFECTS OF OVEREXPOSURE:	- May produce sensitization effects in some individuals. Contains material which caused cancer in laboratory animal tests. Contains material which caused chronic liver, kidney and reproductive organ damage in laboratory animal tests. Risk depends on duration and level of exposure.
EXPOSURE LIMITS:	- TWA: N/A - STEL: N/A - See limits for Hazardous Ingredients on page 1.

IRRITANCY OF PRODUCT: May cause moderate eye and mild skin and respiratory tract irritation.

SENSITIZING CAPABILITY OF PRODUCT: Contains components that may cause skin sensitization.

CARCINOGENICITY: None Known.

TERATOGENICITY AND EMBRYOTOXICITY: N/A

REPRODUCTIVE TOXICITY: N/A

MUTAGENICITY: N/A

SYNERGISTIC MATERIALS: N/A

### SECTION VII: PREVENTIVE MEASURES

PERSONAL PROTECTIVE EQUIPMENT: - GLOVES: Chemical Resistant gloves if contact (especially prolonged or repeated) is likely  
 - RESPIRATORY: Not normally necessary. If material is heated or aerosolized use NIOSH approved particulate respirator for dust, fume, mist to avoid excessive exposure of personnel. Follow provisions of 29CFR 1910.134.  
 - EYE PROTECTION: Safety Glasses with side shields or Goggles.  
 - FOOTWEAR: N/A  
 - CLOTHING: Appropriate to prevent eye and skin contact.  
 - OTHER: Have eyewash and safety shower in area.

ENGINEERING CONTROLS: Provide Exhaust ventilation if material is heated or aerosolized.

LEAK AND SPILL PROCEDURES: For small spills, wipe up and dispose of in DOT approved waste containers. For larger spills, contain by diking with absorbent material. Do not flush to storm sewer or waterway. Do not flush to sanitary sewer. Dispose of all contaminated materials in accordance with Federal, State, and Local regulations.

WASTE DISPOSAL: Dispose of product and contaminated materials in accordance with applicable Federal, State, and Local regulations.

HANDLING PROCEDURES AND EQUIPMENT: **In addition to any precautions listed, you should consult your occupational safety and health specialist to ensure that the suggested procedures will be adequate and in compliance with applicable laws and regulations.**

- Use only in well ventilated area and avoid breathing vapors.
- Avoid skin and eye contact (especially prolonged or repeated contact).
- Wash thoroughly with soap and water after handling material.
- Keep out of the reach of children.



STORAGE - No Storage Requirements.

## REQUIREMENTS:

SPECIAL DOT CLASSIFICATION:

SHIPPING Proper Shipping Name: Environmentally hazardous substance, liquid,  
INFORMATION. n.o.s.

Hazard Class: 9

Packing Group: III

UN/ID Number: UN3082

Technical Name (n.o.s.): Contains diethyltoluenediamine

IATA: Proper Shipping Name: Environmentally hazardous substance, liquid,  
n.o.s.

Hazard Class: 9

Packing Group: III

UN/ID Number: UN3082

Technical Name (n.o.s.): Contains diethyltoluenediamine

Note: This shipping information is supplied as basic guidance only. The size of the packaging may affect the classifications. Refer to appropriate transportation regulations for specific requirements.

HMIS RATING: H-2, F-1, R-0

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**SECTION VIII: FIRST AID MEASURES**

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EYES: Flush eyes with plenty of water for at least 15 minutes (holding eyelids open), longer if there are indications of residual material in eye. See a physician if irritation persists.

SKIN: Remove contaminated clothing and launder before reuse. Remove contaminated shoes. Wash affected area with plenty of soap and water. See a physician if irritation develops or persists.

INHALATION: Move to fresh air immediately. If not breathing give artificial respiration, preferably mouth to mouth. If breathing is difficult, administer oxygen. Keep person warm and quiet. Call a physician at once.

INGESTION: Call a physician at once. Only induce vomiting at the instruction of a physician.

**NOTE: Never give anything by mouth to an unconscious person.**

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**SECTION IX: PREPARATION INFORMATION**

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PREPARED BY: Terry Sluss  
TITLE: Advanced Product Chemist  
TELEPHONE: (330) 374-4011  
ORIGINAL DATE: 04-01-04  
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