SAFETY DATA SHEET

1. Identification

Product identifier **0165TS38 Part A**

Other means of identification

Synonyms Goodrich Kit Components: 74-451-158, 74-451-160 (Contained in Goodrich Kits: 74-451-Q, 74-451-Q-1, 74-451-Q-2).

Recommended use Coating. Sealer.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Supplier

Company name Goodrich Corporation
UTC Aerospace Systems Sensors and Integrated Systems (Formerly De-icing and Specialty Systems)

Address 1555 Corporate Woods Parkway
Uniontown, Ohio 44685
US

E-mail Terry.Sluss@utas.utc.com

Contact name EH&S Manager

Telephone number (330)374-4011

Emergency telephone number (800)424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards	Acute toxicity, inhalation	Category 4
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Avoid breathing mist or vapor. Use only outdoors or in a well-ventilated area. In case of inadequate ventilation wear respiratory protection. Wear protective gloves. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment.

Response If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If experiencing respiratory symptoms: Call a poison center/doctor. Wash contaminated clothing before reuse. Collect spillage.

Storage Store away from incompatible materials.

Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Contact with water liberates flammable gas.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Polyurethane prepolymer	N/A	>50
Aluminium	7429-90-5	<25
Dioctyl adipate	103-23-1	<15
4,4'-Methylenedi(cyclohexyl isocyanate)	5124-30-1	<10

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The manufacturer has claimed one or more hazardous ingredients as trade secret under the OSHA Hazard Communication Standard. The hazards of this (these) ingredient(s) are given on this SDS.

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center/doctor.

Skin contact

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

Eye contact

In case of contact, immediately flush eyes with fresh water for at least 15 minutes while holding the eyelids open. Remove contact lenses if worn. Get medical attention if irritation persists.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and delayed

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Dermatitis. Rash. May cause eye, skin and respiratory tract irritation.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse.

5. Fire-fighting measures

Suitable extinguishing media

Powder. Dry sand.

Unsuitable extinguishing media

Do not use halogenated extinguishing agents or water due to aluminum content.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed such as: Carbon oxides (COx). Nitrogen Oxides (NOx). Hydrogen cyanide. HMDI. Containers may explode when heated or if contaminated with water. Closed containers may also burst if contaminated with water due to CO2 evolved. Aluminum can react with some acids and caustic solutions to produce explosive hydrogen.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Do not get water inside container. Use cool water spray to cool fire exposed containers to minimize risk of rupture.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

In contact with water releases flammable gas.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

This product is miscible in water.

Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Do not get water on spilled substance or inside containers. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Inform appropriate managerial or supervisory personnel of all environmental releases.

7. Handling and storage

Precautions for safe handling

Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Protect from contamination. Protect from moisture. Never allow product to get in contact with water during storage. Keep away from heat, sparks and open flame. Maintain storage temperatures between 32°F to 122°F (0°C to 50°C). Keep out of the reach of children. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	PEL	5 mg/m3	Respirable dust.
		15 mg/m3	Total dust.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)	TWA	0.005 ppm	
Aluminium (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)	Ceiling	0.11 mg/m3	
		0.01 ppm	
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3	Welding fume or pyrophoric powder.
		5 mg/m3	Respirable.
		10 mg/m3	Total

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

US - Tennessee OELs: Skin designation

4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1) Can be absorbed through the skin.

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ensure adequate ventilation, especially in confined areas. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Do not wear contact lenses.

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear suitable protective clothing.

Respiratory protection Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance Silver viscous liquid.

Physical state Liquid.

Form Viscous liquid.

Color Silver.

Odor Odorless.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point > 212.0 °F (> 100.0 °C)

Evaporation rate Negligible (Butyl acetate = 1)

Flammability (solid, gas) Not applicable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not available.

Flammability limit - upper (%) Not available.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure 0.001 mm Hg (77 °F (25 °C))

Vapor density Not available.

Relative density 1.19

Solubility(ies)

Solubility (water) Reacts with water (68 °F (20 °C))

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature Not available.

Viscosity Not available.

Other information

VOC (Weight %) Negligible.

10. Stability and reactivity

Reactivity Reacts with water.

Chemical stability Material is stable under normal conditions.

Possibility of hazardous reactions Hazardous polymerization can occur with elevated temperatures.

Conditions to avoid Heat. Contact with water. Contact with incompatible materials.

Incompatible materials This product may react with mineral acids and strong bases. Strong oxidizing agents. Water. Amines. Alcohols. Metal compounds. Surface Active Agents.

Hazardous decomposition products Carbon oxides. Nitrogen oxides. Cyanide compounds.

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact May cause skin irritation. May cause an allergic skin reaction.

Eye contact Direct contact with eyes may cause temporary irritation.

Ingestion Swallowing may cause gastrointestinal irritation. May cause digestive tract irritation.

Symptoms related to the physical, chemical and toxicological characteristics May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Dermatitis. Rash. May cause eye, skin and respiratory tract irritation.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Components	Species	Test Results
4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)		
Acute		
Inhalation		
LC50	Rat	434 mg/m³, 4 hours

Skin corrosion/irritation May cause skin irritation.

Serious eye damage/eye irritation Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Dioctyl adipate (CAS 103-23-1) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity This product is not expected to cause reproductive or developmental effects.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Persistence and degradability No data is available on the degradability of this product.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)	6.11

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations. Incineration is preferred.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number UN3334

UN proper shipping name Aviation regulated liquid, n.o.s. (Contains methylene bis(4-cyclohexylisocyante))

Transport hazard class(es)

Class 9

Subsidiary risk -

Label(s) 9

Packing group Not applicable.

Environmental hazards

Marine pollutant Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions A35

Packaging exceptions 155

Packaging non bulk 204

IATA

UN number UN3334

UN proper shipping name Aviation regulated liquid, n.o.s. (Contains methylene bis(4-cyclohexylisocyante))

Transport hazard class(es)

Class 9

Subsidiary risk -

Packing group III

Environmental hazards Yes

ERG Code 9A

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN3334

UN proper shipping name AVIATION REGULATED LIQUID, N.O.S. (CONTAINS METHYLENE BIS(4-CYCLOHEXYLISOCYANTE))

Transport hazard class(es)

Class 9

Subsidiary risk -

Packing group Not applicable.

Environmental hazards

Marine pollutant Yes

EmS Not available.

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not established.

General information The size of the packaging may affect the classifications. Refer to appropriate transportation regulations for specific requirements.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminium	7429-90-5	<25
4,4'-Methylenedi(cyclohexyl isocyanate)	5124-30-1	<10

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)
Aluminium (CAS 7429-90-5)
Dioctyl adipate (CAS 103-23-1)

US. New Jersey Worker and Community Right-to-Know Act

4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)
Aluminium (CAS 7429-90-5)
Dioctyl adipate (CAS 103-23-1)

US. Pennsylvania Worker and Community Right-to-Know Law

4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)
Aluminium (CAS 7429-90-5)
Dioctyl adipate (CAS 103-23-1)

US. Rhode Island RTK

4,4'-Methylenedi(cyclohexyl isocyanate) (CAS 5124-30-1)
Aluminium (CAS 7429-90-5)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 03-September-2015

Revision date -

Version # 01

HMIS® ratings Health: 2
Flammability: 1
Physical hazard: 1

NFPA ratings

Disclaimer Goodrich Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.