

1. Identification

Product identifier	0165JC421
Other means of identification	
Synonyms	Goodrich Kit Components: 74-451-235-1, 74-451-235-2 (Contained in Goodrich Kits: 74-451-AQ1, 74-451-AQ2)
Recommended use	Coating. Sealer.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Supplier	
Company name	Goodrich Corporation Collins Aerospace, Interiors - Evacuation, Water & Lighting (Formerly De-icing and Specialty Systems)
Address	1555 Corporate Woods Parkway Uniontown, Ohio 44685 USA
E-mail	Terry.Sluss@utas.utc.com
Contact name	EH&S Manager
Telephone number	(330)374-4011
Emergency telephone number	(800)424-9300/ 1-703-741-5970

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 2
Health hazards	Acute toxicity, dermal	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, skin	Category 1
	Reproductive toxicity	Category 1B
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	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 Highly flammable liquid and vapor. May be fatal if swallowed and enters airways. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause drowsiness or dizziness. May damage fertility or the unborn child. Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Avoid breathing mist/vapors. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment.

Response

In case of fire: Use appropriate media to extinguish. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. 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. If exposed or concerned: Get medical advice/attention. Collect spillage.

Storage

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

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	%
1-Methyl-2-pyrrolidinone	872-50-4	4 - < 5
Methyl ethyl ketone	78-93-3	30 - 40
Aluminium	7429-90-5	< 30
Cyclohexanone	108-94-1	5-20
Naphtha (petroleum), hydrotreated heavy	64742-48-9	< 7
Solvent naphtha (petroleum), light aromatic	64742-95-6	< 7
Titanium dioxide	13463-67-7	< 7
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate	41556-26-7	< 2
Carbon black	1333-86-4	< 1
Methyl 1,2,2,6,6-pentamethyl-4-piperidyl sebacate	82919-37-7	< 1
Polyethylene glycol di[3-[3-(2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyphenyl]-1-oxopropyl] ether	104810-47-1	< 1
Polyethylene glycol mono-3-[3-(2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyphenyl]-1-oxopropyl ether	104810-48-2	< 1

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 the exact percentage as trade secret under the OSHA Hazard Communication Standard.

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. Call a poison center or doctor/physician if you feel unwell.
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	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and 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. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Edema. Prolonged exposure may cause chronic effects.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	Take off all contaminated clothing immediately. If exposed or concerned: Get medical advice/attention. Show this safety data sheet to the doctor in attendance. 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	Alcohol resistant foam. Water fog. Dry chemical powder. Dry sand. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. During fire, gases hazardous to health may be formed such as: Carbon monoxide. Carbon dioxide. Peroxides. Aliphatic hydrocarbons. Nitrogen oxides. Titanium oxide. Titanium dioxide. Aluminum oxides.
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	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). 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. Ventilate closed spaces before entering them. 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	<p>Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water.</p> <p>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. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. 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.</p> <p>Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>

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**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash thoroughly after handling. Wash contaminated clothing before reuse. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. Never allow product to get in contact with water during storage. 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/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
Carbon black (CAS 1333-86-4)	PEL	3.5 mg/m ³	
Cyclohexanone (CAS 108-94-1)	PEL	200 mg/m ³	
		50 ppm	
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m ³	
		200 ppm	
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.
Titanium dioxide (CAS 13463-67-7)	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.
Carbon black (CAS 1333-86-4)	TWA	3 mg/m ³	Inhalable fraction.
Cyclohexanone (CAS 108-94-1)	STEL	50 ppm	
	TWA	20 ppm	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm	
	TWA	200 ppm	
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Aluminium (CAS 7429-90-5)	TWA	5 mg/m3	Respirable.
		5 mg/m3	Welding fume or pyrophoric powder.
		10 mg/m3	Total
Carbon black (CAS 1333-86-4)	TWA	3.5 mg/m3	
Cyclohexanone (CAS 108-94-1)	TWA	100 mg/m3	
		25 ppm	
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m3	
		300 ppm	
		TWA	590 mg/m3 200 ppm

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	TWA	40 mg/m3
		10 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
1-Methyl-2-pyrrolidinone (CAS 872-50-4)	100 mg/l	5-Hydroxy-N-methyl-2-pyrrolidinone	Urine	*
Cyclohexanone (CAS 108-94-1)	80 mg/l	1,2-Cyclohexanediol, with hydrolysis	Urine	*
	8 mg/l	Cyclohexanol, with hydrolysis	Urine	*
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Exposure guidelines**US - California OELs: Skin designation**

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.
Can be absorbed through the skin.

US - Minnesota Haz Subs: Skin designation applies

Cyclohexanone (CAS 108-94-1)

Skin designation applies.

US - Tennessee OELs: Skin designation

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Cyclohexanone (CAS 108-94-1)

Danger of cutaneous absorption

US WEEL Guides: Skin designation

1-Methyl-2-pyrrolidinone (CAS 872-50-4)

Can be absorbed through the skin.

US. NIOSH: Pocket Guide to Chemical Hazards

Cyclohexanone (CAS 108-94-1)

Can be absorbed through the skin.

Appropriate engineering controls Explosion-proof general and local exhaust ventilation. Good general ventilation 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. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Chemical respirator with organic vapor cartridge and full facepiece.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor cartridge and full facepiece.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. When using do not smoke. 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	Silvery. Thin liquid.
Physical state	Liquid.
Form	Liquid.
Color	Silver.
Odor	Ketone. Peppermint.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	175 - 396 °F (79.4 - 202.2 °C)
Flash point	16.0 °F (-8.9 °C) TCC - MEK
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	0.6 % v/v
Explosive limit - upper (%)	12 % v/v
Vapor pressure	3.95 mm Hg (Cyclohexanone) 70.6 mm Hg (MEK)
Vapor density	> 1 (Air = 1)
Relative density	1.07 - 1.11
Solubility(ies)	
Solubility (water)	Slightly soluble (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	55 - 65

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Avoid temperatures exceeding the flash point. Contact with water. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Ammonia. Amines. Isocyanates. Caustics.
Hazardous decomposition products	Carbon monoxide. Carbon dioxide. Peroxides. Aliphatic hydrocarbons. Nitrogen oxides. Titanium oxide. Titanium dioxide. Aluminum oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May irritate throat and upper respiratory system. May cause drowsiness and dizziness. Headache. Nausea, vomiting.
Skin contact	Harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye irritation.
Ingestion	May be fatal if swallowed and enters airways. Swallowing may cause gastrointestinal irritation. Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics

Aspiration may cause pulmonary edema and pneumonitis. May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Edema.

Information on toxicological effects

Acute toxicity Harmful in contact with skin. May be fatal if swallowed and enters airways. Narcotic effects.

Components	Species	Test Results
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate (CAS 41556-26-7)		
<u>Acute</u>		
Oral		
LD50	Rat	2369 - 4247 mg/kg
Carbon black (CAS 1333-86-4)		
<u>Acute</u>		
Dermal		
LD50	Rabbit	> 3000 mg/kg
Oral		
LD50	Rat	> 8000 mg/kg
Cyclohexanone (CAS 108-94-1)		
<u>Acute</u>		
Dermal		
ATE		300 µg/kg bw/day
Inhalation		
Gas		
ATE		4500 ppm, 4 hours per day
Vapor		
ATE		11 mg/l, 4 hours
Dust and mist.		
ATE		1.5 mg/l, 4 hours per year
In air		
LC50	Rat	6.2 mg/l, 4 Hours
Oral		
LD50	Rat	1890 mg/kg

Components	Species	Test Results
Methyl ethyl ketone (CAS 78-93-3)		
Acute		
Dermal		
LD50	Rabbit	5000 mg/kg
Inhalation		
LC50	Rat	35.3 mg/l
Oral		
LD50	Rat	3000 mg/kg
Naphtha (petroleum), hydrotreated heavy (CAS 64742-48-9)		
Acute		
Dermal		
LD50	Rabbit	> 3160 mg/kg
Titanium dioxide (CAS 13463-67-7)		
Acute		
Oral		
LD50	Rat	> 5000 mg/kg
Skin corrosion/irritation	Causes skin irritation.	
Serious eye damage/eye irritation	Causes serious eye irritation.	
Respiratory or skin sensitization		
Respiratory sensitization	Not a respiratory sensitizer.	
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	Risk of cancer cannot be excluded with prolonged exposure.	
IARC Monographs. Overall Evaluation of Carcinogenicity		
Carbon black (CAS 1333-86-4)	2B Possibly carcinogenic to humans.	
Cyclohexanone (CAS 108-94-1)	3 Not classifiable as to carcinogenicity to humans.	
Naphtha (petroleum), hydrotreated heavy (CAS 64742-48-9)	3 Not classifiable as to carcinogenicity to humans.	
Solvent naphtha (petroleum), light aromatic (CAS 64742-95-6)	3 Not classifiable as to carcinogenicity to humans.	
Titanium dioxide (CAS 13463-67-7)	2B Possibly carcinogenic to humans.	
NTP Report on Carcinogens		
Carbon black (CAS 1333-86-4)	Known To Be Human Carcinogen.	
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)		
Not listed.		
Reproductive toxicity	May damage fertility or the unborn child.	
Specific target organ toxicity - single exposure	May cause drowsiness and dizziness.	
Specific target organ toxicity - repeated exposure	Not classified.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Prolonged exposure to cyclohexanone in animals resulted in weight loss, incoordination, distended ear veins, excess salivation, narcosis, lethargy, hypothermia, lymphocytosis and slight heart, liver, and kidney damage. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage.	
12. Ecological information		
Ecotoxicity	Toxic to aquatic life with long lasting effects.	

Components	Species	Test Results	
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate (CAS 41556-26-7)			
Aquatic			
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>)	1 mg/l, 96 Hours
Carbon black (CAS 1333-86-4)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Leuciscus idus	> 1000 mg/l, 96 Hours
Cyclohexanone (CAS 108-94-1)			
Aquatic			
Algae	EC50	Desmodesmus subspicatus	> 100 mg/l, 72 Hours (OECD 201: Alga, Growth Inhibition Test,; Static system, Fresh water, Read-across, GLP)
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 hours (Acute Immobilisation Test , Static, system, Fresh water, Read-across, GLP)
Fish	LC50	Pimephales promelas	527 - 732 mg/l, 96 hours (Flow-through system, Fresh water,;Experimental value)
Methyl ethyl ketone (CAS 78-93-3)			
Aquatic			
Crustacea	LC50	Daphnia magna	12600 mg/l, 24 Hours
Fish	LC50	Goldfish (<i>Carassius auratus</i>)	> 5000 mg/l, 24 Hours
Naphtha (petroleum), hydrotreated heavy (CAS 64742-48-9)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Pimephales promelas	8.2 mg/l, 96 hours
Solvent naphtha (petroleum), light aromatic (CAS 64742-95-6)			
Aquatic			
<i>Acute</i>			
Crustacea	EL50	Daphnia	4.5 mg/l, 48 hours
Fish	LL50	Oncorhynchus mykiss	10 mg/l, 96 hours
Titanium dioxide (CAS 13463-67-7)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Daphnia magna	> 100 mg/l, 48 Hours
Fish	LL50	Oryzias latipes	> 100 mg/l, 96 Hours

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

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

1-Methyl-2-pyrrolidinone (CAS 872-50-4)	-0.54
Cyclohexanone (CAS 108-94-1)	0.81
Methyl ethyl ketone (CAS 78-93-3)	0.29
Polyethylene glycol	< -1.3
di[3-[3-(2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyphenyl]-1-oxopropyl] ether (CAS 104810-47-1)	
Polyethylene glycol	< -1.3
mono-3-[3-(2H-benzotriazol-2-yl)-5-tert-butyl-4-hydroxyphenyl]-1-oxopropyl ether (CAS 104810-48-2)	

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.
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	UN1133
UN proper shipping name	Adhesives, containing a flammable liquid
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	
Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	149, B52, IB2, T4, TP1, TP8
Packaging exceptions	150
Packaging non bulk	173
Packaging bulk	242

IATA

UN number	UN1133
UN proper shipping name	Adhesives, containing a flammable liquid
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
Environmental hazards	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1133
UN proper shipping name	Adhesives, containing a flammable liquid
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	II
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 DOT Regulated Marine Pollutant.

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)

1-Methyl-2-pyrrolidinone (CAS 872-50-4) 1.0 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

Cyclohexanone (CAS 108-94-1) Listed.

Methyl ethyl ketone (CAS 78-93-3) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA)

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

Classified hazard categories

Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Aspiration hazard

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
1-Methyl-2-pyrrolidinone	872-50-4	4 - < 5
Aluminium	7429-90-5	< 30

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)

Contains component(s) regulated under the Safe Drinking Water Act.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Methyl ethyl ketone (CAS 78-93-3) 6714

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Cyclohexanone (CAS 108-94-1) Low priority

Methyl ethyl ketone (CAS 78-93-3) Low priority

US state regulations

US. Massachusetts RTK - Substance List

1-Methyl-2-pyrrolidinone (CAS 872-50-4)

Aluminium (CAS 7429-90-5)

Carbon black (CAS 1333-86-4)

Cyclohexanone (CAS 108-94-1)

Methyl ethyl ketone (CAS 78-93-3)

Titanium dioxide (CAS 13463-67-7)

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

1-Methyl-2-pyrrolidinone (CAS 872-50-4)

Aluminium (CAS 7429-90-5)
Carbon black (CAS 1333-86-4)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)
Titanium dioxide (CAS 13463-67-7)

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

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Aluminium (CAS 7429-90-5)
Carbon black (CAS 1333-86-4)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)
Naphtha (petroleum), hydrotreated heavy (CAS 64742-48-9)
Titanium dioxide (CAS 13463-67-7)

US. Rhode Island RTK

Aluminium (CAS 7429-90-5)
Carbon black (CAS 1333-86-4)
Cyclohexanone (CAS 108-94-1)
Methyl ethyl ketone (CAS 78-93-3)
Titanium dioxide (CAS 13463-67-7)

California Proposition 65



WARNING: This product can expose you to chemicals including Titanium dioxide, which is known to the State of California to cause cancer, and 1-Methyl-2-pyrrolidinone, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California Proposition 65 - CRT: Listed date/Carcinogenic substance

Carbon black (CAS 1333-86-4) Listed: February 21, 2003
Titanium dioxide (CAS 13463-67-7) Listed: September 2, 2011

California Proposition 65 - CRT: Listed date/Developmental toxin

1-Methyl-2-pyrrolidinone (CAS 872-50-4) Listed: June 15, 2001

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

1-Methyl-2-pyrrolidinone (CAS 872-50-4)
Aluminium (CAS 7429-90-5)
Bis(1,2,2,6,6-pentamethyl-4-piperidyl) sebacate (CAS 41556-26-7)
Carbon black (CAS 1333-86-4)
Methyl ethyl ketone (CAS 78-93-3)
Naphtha (petroleum), hydrotreated heavy (CAS 64742-48-9)
Solvent naphtha (petroleum), light aromatic (CAS 64742-95-6)
Titanium dioxide (CAS 13463-67-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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 20-July-2020
Version # 04
HMIS® ratings Health: 3*
Flammability: 3
Physical hazard: 1

NFPA ratings**List of abbreviations**

EC50: Effective Concentration 50%.
LC50: Lethal Concentration 50%.
LD50: Lethal Dose, 50%.
NOEC: No observed effect concentration.
STEL: Short-term Exposure Limit.
TWA: Time weighted average.

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.

1. Identification

Product identifier	KE7005
Other means of identification	
Synonyms	Goodrich Kit Components: 74-451-120; 74-451-120-1; 74-451-120-2; 74-451-143; 74-451-152. Goodrich Kits: 74-451-K; 74-451-L; 74-451-O; 74-451-R-1; 74-451-R-2; 74-451-T; 74-451-AB; 74-451-AG, 74-451-AQ1 and 74-451-AQ2.
Recommended use	Accelerator.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/Distributor information	
Supplier	
Company name	Goodrich Corporation Collins Aerospace, Interiors - Evacuation, Water & Lighting (Formerly De-icing and Specialty Systems)
Address	1555 Corporate Woods Parkway Uniontown, Ohio 44685 USA
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	Flammable liquids	Category 2
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Sensitization, respiratory	Category 1
	Sensitization, skin	Category 1
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Specific target organ toxicity, repeated exposure	Category 2 (lungs)
OSHA defined hazards	Not classified.	

Label elements



Signal word

Danger

Hazard statement

Highly flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Causes serious eye irritation. May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing cancer. May cause respiratory irritation. May cause drowsiness or dizziness. May cause damage to organs (lungs) through prolonged or repeated exposure.

Precautionary statement

Prevention

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist/vapors. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.

Response

In case of fire: Use appropriate media to extinguish. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center/doctor. 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. If exposed or concerned: Get medical advice/attention.

Storage

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

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

Reacts slowly with water.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Polymethylene polyphenyl isocyanate	9016-87-9	60
Methyl ethyl ketone	78-93-3	40

Contains

Chemical name	CAS number	%
Methylene diphenyl diisocyanate	101-68-8	20 - 25

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

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. If experiencing respiratory symptoms: Call a poison center or doctor/physician.

Skin contact

Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Wash contaminated clothing before reuse.

Eye contact

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion

Rinse mouth. 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. Never give anything by mouth to a victim who is unconscious or is having convulsions.

Most important symptoms/effects, acute and delayed

May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Thermal burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information

Take off all contaminated clothing immediately. IF exposed or concerned: Get medical advice/attention. 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	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Water. Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Vapors may form explosive mixtures with air. Vapors may travel considerable distance to a source of ignition and flash back. Reacts slowly with water. Closed containers may rupture violently if heated. May polymerize at temperatures above 160 °C (320 ° F). During fire, hazardous combustion products are released that may include: Carbon oxides (CO _x). Nitrogen Oxides (NO _x). Cyanides.
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	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Prevent buildup of vapors or gases to explosive concentrations.
General fire hazards	Highly flammable liquid and vapor.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. 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	<p>Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Take precautionary measures against static discharge. Use only non-sparking tools.</p> <p>Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.</p> <p>Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.</p> <p>Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. When using do not smoke. Explosion-proof general and local exhaust ventilation. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Do not breathe mist/vapors. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in a cool, dry place out of direct sunlight. Store in tightly closed container. Store in a well-ventilated place. Keep in an area equipped with sprinklers. 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
Methyl ethyl ketone (CAS 78-93-3)	PEL	590 mg/m ³
		200 ppm

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

Contains	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m ³
		0.02 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value
Methyl ethyl ketone (CAS 78-93-3)	STEL	300 ppm
	TWA	200 ppm

Contains	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	TWA	0.005 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Methyl ethyl ketone (CAS 78-93-3)	STEL	885 mg/m ³
		300 ppm
	TWA	590 mg/m ³ 200 ppm

Contains	Type	Value
Methylene diphenyl diisocyanate (CAS 101-68-8)	Ceiling	0.2 mg/m ³
		0.02 ppm
	TWA	0.05 mg/m ³ 0.005 ppm

Biological limit values**ACGIH Biological Exposure Indices**

Components	Value	Determinant	Specimen	Sampling Time
Methyl ethyl ketone (CAS 78-93-3)	2 mg/l	MEK	Urine	*

* - For sampling details, please see the source document.

Appropriate engineering controls

Explosion-proof general and local exhaust ventilation. Good general ventilation 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. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Eye wash fountain is recommended.

Skin protection

Hand protection Wear appropriate chemical resistant gloves. The use of nitrile-latex gloves is recommended.

Skin protection

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

Respiratory protection

If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. When using do not smoke. 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**

Physical state	Liquid.
Form	Liquid.
Color	Brown.
Odor	Musty
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	24.8 °F (-4.0 °C)
Evaporation rate	Not available.
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	Not available.
Vapor density	Not available.
Relative density	1.025
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Percent volatile	40% by wt. or 50% by volume.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Material reacts slowly with water.
Conditions to avoid	Avoid heat, sparks, open flames and other ignition sources. Moisture. Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Water. Strong oxidizing agents. Alkaline metals. Alcohols. Amines. Ammonia. Caustics. Isocyanates. Phenols. Polyols. Moist organic absorbents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation Harmful if inhaled. May cause drowsiness and dizziness. Headache. Nausea, vomiting. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation.

Isocyanates: At room temperature, vapors are minimal due to low volatility. However, certain operations may generate vapor or mist concentrations sufficient to cause respiratory irritation and other adverse effects. Such operations include those in which the material is heated, sprayed or otherwise mechanically dispersed such as drumming, venting or pumping. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. May cause pulmonary edema (fluid in the lungs.) Effects may be delayed. Decreased lung function has been associated with overexposure to isocyanates.

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

Eye contact Causes serious eye irritation.

Ingestion May cause digestive tract irritation.

Symptoms related to the physical, chemical and toxicological characteristics May cause drowsiness and dizziness. Headache. Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Difficulty in breathing. Skin irritation. May cause redness and pain. May cause an allergic skin reaction. Dermatitis. Rash.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Components	Species	Test Results
Methyl ethyl ketone (CAS 78-93-3)		
Acute		
Dermal		
LD50	Rabbit	5000 mg/kg
Inhalation		
LC50	Rat	35.3 mg/l
Oral		
LD50	Rat	3000 mg/kg
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)		
Acute		
Dermal		
LD50	Rabbit	> 10000 mg/kg
Inhalation		
<i>Mist</i>		
LC50	Rat	> 490 mg/m ³ , 4 Hours
Oral		
LD50	Rat	> 10000 mg/kg
Contains	Species	Test Results

Methylene diphenyl diisocyanate (CAS 101-68-8)

Acute

Inhalation

LC50 Rat > 2.24 mg/l, 1 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Causes serious eye 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 Suspected of causing cancer.

IARC Monographs. Overall Evaluation of Carcinogenicity

Methylene diphenyl diisocyanate (CAS 101-68-8) 3 Not classifiable as to carcinogenicity to humans.
Polymethylene polyphenyl isocyanate (CAS 9016-87-9) 3 Not classifiable as to carcinogenicity to humans.

NTP Report on Carcinogens

Not listed.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation. May cause drowsiness and dizziness.
Specific target organ toxicity - repeated exposure	May cause damage to organs (lungs) through prolonged or repeated exposure.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. May cause damage to organs through prolonged or repeated exposure. Prolonged exposure may cause chronic effects.
Further information	Prolonged or repeated exposure may be harmful.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Methyl ethyl ketone (CAS 78-93-3)		
Aquatic		
Crustacea	LC50 Daphnia magna	12600 mg/l, 24 Hours
Fish	LC50 Goldfish (Carassius auratus)	> 5000 mg/l, 24 Hours

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

Bioaccumulative potential Accumulation in aquatic organisms is expected.

Partition coefficient n-octanol / water (log Kow)

Methyl ethyl ketone (CAS 78-93-3) 0.29

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. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F
D035: Waste Methyl ethyl ketone
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 Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

UN number	UN1193
UN proper shipping name	Ethyl methyl ketone or Methyl ethyl ketone
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3

Packing group II
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.
Special provisions IB2, T4, TP1
Packaging exceptions 150
Packaging non bulk 202
Packaging bulk 242

IATA

UN number UN1193
UN proper shipping name Ethyl methyl ketone or Methyl ethyl ketone
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group II
Environmental hazards No.
Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number UN1193
UN proper shipping name Ethyl methyl ketone or Methyl ethyl ketone
Transport hazard class(es)
Class 3
Subsidiary risk -
Label(s) 3
Packing group II
Environmental hazards
Marine pollutant No.
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.

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.

TSCA Chemical Action Plans, Chemicals of Concern

Methylene diphenyl diisocyanate (CAS 101-68-8)	Methylene Diphenyl Diisocyanate (MDI) And Related Compounds Action Plan [RIN 2070-ZA15]
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)	Methylene Diphenyl Diisocyanate (MDI) And Related Compounds Action Plan [RIN 2070-ZA15]

CERCLA Hazardous Substance List (40 CFR 302.4)

Methyl ethyl ketone (CAS 78-93-3)	Listed.
Methylene diphenyl diisocyanate (CAS 101-68-8)	Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Toxic Substances Control Act (TSCA) All components of the mixture on the TSCA 8(b) inventory are designated "active".

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

Classified hazard categories	Flammable (gases, aerosols, liquids, or solids) Acute toxicity (any route of exposure) Skin corrosion or irritation Serious eye damage or eye irritation Respiratory or skin sensitization Carcinogenicity Specific target organ toxicity (single or repeated exposure)
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SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Polymethylene polyphenyl isocyanate	9016-87-9	60
Methylene diphenyl diisocyanate	101-68-8	20 - 25

Other federal regulations

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

Methylene diphenyl diisocyanate (CAS 101-68-8)

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Methyl ethyl ketone (CAS 78-93-3) 6714

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Methyl ethyl ketone (CAS 78-93-3) 35 %WV

DEA Exempt Chemical Mixtures Code Number

Methyl ethyl ketone (CAS 78-93-3) 6714

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Methyl ethyl ketone (CAS 78-93-3) Low priority

US state regulations

US. Massachusetts RTK - Substance List

Methyl ethyl ketone (CAS 78-93-3)
Methylene diphenyl diisocyanate (CAS 101-68-8)

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

Methyl ethyl ketone (CAS 78-93-3)
Methylene diphenyl diisocyanate (CAS 101-68-8)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)

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

Methyl ethyl ketone (CAS 78-93-3)
Methylene diphenyl diisocyanate (CAS 101-68-8)

US. Rhode Island RTK

Methyl ethyl ketone (CAS 78-93-3)
Methylene diphenyl diisocyanate (CAS 101-68-8)

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. For more information go to www.P65Warnings.ca.gov.

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

Methyl ethyl ketone (CAS 78-93-3)
Methylene diphenyl diisocyanate (CAS 101-68-8)
Polymethylene polyphenyl isocyanate (CAS 9016-87-9)

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)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
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	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	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	19-June-2019
Revision date	-
Version #	01
HMIS® ratings	Health: 3* Flammability: 2 Physical hazard: 0

NFPA ratings



List of abbreviations

LC50: Lethal Concentration, 50%.
 LD50: Lethal Dose 50%.
 STEL: Short-Term Exposure Limit.
 TWA: Time Weighted Average Value.
 IATA: International Air Transport Association.
 IMDG Code: International Maritime Dangerous Goods Code.
 DOT: Department of Transportation (49 CFR 172.101).

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.