## **Houghton Chemical Corporation**

Safety Data Sheet



## SAFE-T-THERM® AL

Section 1 - Identification							
Houghton Chemical Corporation							
Manufacturer Address 52 Cambridge Street, Allston, MA 02134							
1-617-254-1010 or 1-800-777-2466							
Emergency Telephone CHEMTREC: 1-800-424-9300							
Chemical Name & Synonyms Antifreeze/Inhibited Propylene Glycol							
Chemical Family Propylene Glycol Mixture							
Recommended Use Heat Transfer Fluid							
Restrictions on UseDilution to 50% is generally recommended: dilute to meet local condition.							
Section 2 – Hazard(s) Identification							
Hazard Classification Toxic to Reproduction, Category 2							
Signal Word Warning							
Hazard Statement Suspected of damaging fertility or the unborn child.							
Pictogram Description Health Hazard							
Precautionary Statement   Obtain special instructions before use. Do not handle until all safety precautions been read and understood. Wear eye & face protection and protective gloves a protective clothing.     Response:   If exposed or concerned: Get medical advice.     Storage:   Storage:     Store locked up.   Disposal:	Response: If exposed or concerned: Get medical advice. Storage: Store locked up. Disposal: Contact local sewer, municipal, state and/or federal agencies to determine appropriate disposal options for the product. Dispose of this container with a registered						
Any other Hazard not otherwise Not Applicable							
Section 3 – Composition and Information on Ingredients							
Chemical Name Common name and synonyms CAS # % by weight							
Propylene Glycol 1,2 - Propanediol 57-55-6 93%							
Vater N/A 7732-18-5 1%							
Inhibitors & Dye N/A Proprietary 6%							
Section 4 – First aid Measures							
Symptoms of Exposure							
Acute Irritation of affected area							
Delayed Irritation	Irritation						
Inhalation Vapors and mists expected to be slightly irritating to upper respiratory tract.							
Skin Irritation may result							
Eye Contact Irritation may cause transitory stinging and tearing.	t Irritation may cause transitory stinging and tearing.						
Very low toxicity if ingested. Ingestion of larger amounts may cause gastrointestinal upset and							
possible temporary central nervous system depression.							
First Aid Instructions							
on Remove to fresh air. If symptoms persist, seek medical attention.							
Skin Wash skin with soap and water. Remove any contaminated clothing. Seek medical attention if irritations develops or persists.	Wash skin with soap and water. Remove any contaminated clothing. Seek medical attention if						
	Flush with water for at least 20 minutes. Seek medical attention if irritations develops or persists.						
	DO NOT induce vomiting, seek medical attention.						
	Not Applicable						

Suitable Extinguishing Material     Water, water fog, water spray, alcohol-resistant foam, dry chemical, sand, or carbon dioxide.       Unsuitable Extinguishing Material     No Data Available       Hazards from Combustion     Snoke may contain the original material in addition to but not limited to: Carbon Monoxide, Carbon Dioxide.       Special Protective Equipment for Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas and keep upwind of fire.       Special Protective Equipment to prevent the contained breathing apparatus tapron, boots, and thill suit will be necessary depending on the extent of clanu up task. If ventilated one on the store of clanu up task. If ventilation does not control altone concentration them respiratory protection equipment to prevent the containment that meets SPAS. 29 CFR 1910. 134 and ANSI 288.2 requirements should be used.       Methods and materials used for containent that meets SPAS. 29 CFR 1910. 134 and ANSI 288.2 requirements for absorb with inert material and place in chemical vaste container.       Caleet (uption for safe handling     Protect container from physical damage. Wear appropriate personal protection equipment. Don to expose containers to open flame, excessive heat, or direct sunight. Use local exhaust ver processing area. Do not eat, drive to roso smoke around products.       Recommendations on the conditions for safe torial protection or sofker around products.     Store in a cool, dry and well ventilated area away from sources of heat, moisture or sofker around products.       Recommendations on the conditions for safe torial protectine sofker around products.     Not Applicable	Se	ction 5 – Fire Fighting Measures			
Unsuitable Extinguishing Material     No Data Available       Unsuitable Extinguishing Material     No Data Available       Hazards from Combustion     Smoke may contain the original material in addition to but not limited to: Carbon Monxide, Carbon Dioxide.       Special Protective Equipment for Fredghters     Wera self-contained breathing apparatus and protective suit. Evacuate personal protective equipment.       Use of personal processing Protective equipment to prevent the contamination of skin, eyes, and clothing.     Ventilate area of leak or googles is recommended. Chemical resistant gloves, chemical resistant apron, boots, and full suit will be necessary depending on the extent of clean up task. If ventilation does not control airborne concentration then respiratory protection equipment that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 reguirements should be used.       Collect liquid in an appropriate container or absorb with inert material and place in chemical waste container.       Protector or safe handling       Section 7 – Handling and Storage       Protection equipment. Do not expose containers to sup full sub cole schaust over processing area. Do not est, think or smoke around products.       Storage. Storage-Anading incompatibilities.       Not Applicable       Areadow and the subsolution is lised for the reduct. Keep container losed to prevent contamination.       Storage. Storage-Anading incompatibilities.       Not Applicable       Not Applicable       Not Applic		Water, water fog, water spray, alcohol-resistant foam, dry chemical, sand,			
Hazards from Combustion     Smoke may contain the original material in addition to but not limited to: Carbon Monxide, Carbon Dioxide, Carbon Dioxide.       Special Protective Equipment for Firefighters     Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas and keep upwind of fire.       Use of personal precautions     Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal proceive equipment.       Protective equipment to prevent the contamination of skin, eyes, and clothing.     Ventilate area of leak or spill. Remove all sources of ignition. Suit will be necessary depending on the extent of clean up task. If ventilation does not comtrol respiratory protection equipment that meets OSHA's 20 CFR 1910.134 and ANSI 288.2 requirements should be used.       Methods and materials used for containment     Collect liquid in an appropriate container or absorb with inert material and place in chemical awase. containers       Cleanup procedures     Do not flush to sever. Comply with all federal, state, and local regulations.       Protect container from physical damage. Wear appropriate personal protection equipment. Do not expose containers to open flame, excessive and incompatibilities.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Not Applicable       Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatible materials. Observe all warnings and precautions listed for the product. Keep container toopsel container for the product.       Other Exposure Limits (PELS)		or carbon dioxide.			
Special Protective Equipment for     Carbon Monoxide, Carbon Dioxide.       Special Protective Equipment for     Wear self-contained breating apparatus and protective suit. Evacuate personnel to safe areas and keep upwind of fire.       Use of personal procautions     Ventilate area of leak or split. Remove all sources of ignition. Wear appropriate personal protective equipment.       Use of personal procautions     Ventilate area of leak or split. Remove all sources of ignition. Wear appropriate personal protective equipment.       Use of personal procautions     Ventilate area of leak or split. Remove all sources of ignition. Wear appropriate personal protective equipment.       Use of personal procautions     Ventilate area of leak or splits or container or absorb with ill suit will be necessary depending on the extent of clean up task. If ventilation dees or spongeronate container or absorb with inert material and place in chemical waste container.       Cellect liquid in an appropriate container or absorb with inert material and place in chemical waste container.     Do not fush to sever. Comply with all federal, state, and local regulations.       Precautions for safe handling     Section 7 - Handling and Storage     Protect container from physical damage. Wear appropriate personal protective site of other product. Keep container closed to prevent ontaination.       Storage handling incompatibilities.     Store in a cool, dry and well ventilated area any flow for total vapor and aerosol.       Recommendations on the conditions for safe storage. Storage handling incompatibilities.	Unsuitable Extinguishing Material	No Data Available			
Special Protective Equipment for Firefighters     Wear self-contained breathing apparatus and protective suit. Evacuate personnel to safe areas and keep upwind of tire.       Use of personal precautions     Section 6 – Accidental Release Measures       Use of personal precautions     Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment.       Usage of safety glasses or googles is recommended. Chemical resistant gloves, chemical resistant apron, boots, and full suit will be contamination of skin, eyes, and clothing.       Wethods and materials used for containment     Collect liquid in an appropriate container or absorb with inert material and place in chemical waste containere.       Recommendations for safe handling     Protect container from physical damage. Wear appropriate personal protection equipment. Do not expose containers to open fiame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not est, drink or simke around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Not explicable       Nencian Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.       Use mechanical (general) ventilation to control airborne levels below exposure guidelines.     Wear spropriate       Other Exposure Limits     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.       Use dotin	Hazards from Combustion				
Section 6 – Accidental Release Measures       Use of personal proceutions     Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment.       Usage of safety glasses or googles is recommended. Chemical resistant gloves, chemical resistant apron, boots, and full suit will be contamination of skin, eyes, and dothing.       Protective equipment to prevent the contamination of skin, eyes, and dothing.       Methods and materials used for containment       Cleanup procedures       Do not flush to sewer. Comply with all federal, state, and local reguiments should be used.       Precautions for safe handling       Precautions for safe handling torage, Storage/handling incompatibilities.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.       Section 8 – Exposure Controls/Personal Protection equipment and uprotection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not eat, drink or simoka around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Not explicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit     Not Applicable       Appearance (physical state, color, etc.)     Liguid, Clear, Fluorescent Yellow exposure guidelines. <td>Special Protective Equipment for</td> <td></td>	Special Protective Equipment for				
Use of personal precautions     Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment.       Usage of safety glasses or googles is recommended. Chemical resistant gloves, chemical resistant apron, boots, and full suit will be necessary depending on the extent of clean up task. If ventilation does not control airborne contration then respiratory protection equipment that meets OSHA's 29 CFR 1910.134 and ANSI 288.2 requirements should be used.       Collect Ilquid in an appropriate container or absorb with inert material and place in chemical waste container.     Do not fush to sewer. Comply with all federal, state, and local regulations.       Precautions for safe handling     Section 7 - Handling and Storage excessive heat, or direct sunlight. Use local exhaust over processing area. Do not eat, drink or smoke around products.       Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatible materials. Observe all warnings and protection equipments.       OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.       Upper/lower fiammability or explosive limits Vapor protective safety glasses or googles, gloves, apron, vapor respirator.       Apperication (as 50%)     2:47 × 1910       Appropriate personal protective safety glasses or googles, gloves, apron, vapor respirator.       Other Exposure Limits     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.	Firefighters				
Observe of personnal protective equipment.       Protective equipment to prevent the contamination of skin, eyes, and clothing.     Usage of safety glasses or googles is recommended. Chemical resistant gloves, chemical resistant apron, boots, and full suit will be enconsary depending on the extent of clean up task. If ventilation does not control airborne concentration then respiratory protection equipment that meets OSHA's 29 CFR 1910. 134 and ANSI 288.2 requirements should be used.       Methods and materials used for containment     Collect liquid in an appropriate container.       Cleanup procedures     Collect liquid in an appropriate container.       Do not flush to sewer. Comply with all federal, state, and local regulations.     Protecticon equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not et affink or smoke around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Store in a cool. dry and well ventilated area away from sources of heat, merican Conference of Governmental Industrial Hygienists (ACGH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.       Dipervisional protection equipments.     Wear protective safety glasses or googles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties     Liquid, Clear, Fluorescent Vellow       Upper/lower filammability or explosive limits     Not Applicable       Am	Section	on 6 – Accidental Release Measures			
appropriate personal protective equipment.     Usage of safery glasses or googles is recommended. Chemical resistant apon, boots, and full suit will be contamination of skin, eyes, and clothing.       Protective equipment to prevent the control airborne concentration then respiratory protection equipment that meets OSHA's 29 CFR 1910.134 and ANSI 288.2 requirements should be used.       Cleanup procedures     Collect liquid in an appropriate container or absorb with inert material and place in chemical waste container.       Do not flush to sewer. Comply with all federal, state, and local regulations.     Protection equipment. Do not expose containers to open flame, excessive heat, or direct sunight. Use local exhaust over processing area. Do not et at, fink or smoke around products.       Recommendations on the conditions for safe storage. Storage/handling incompatibilities.     Store in a cool, dry and well ventilated area away from sources of heat, monitor and cover mental industrial. Observe all warnings and precautions listed for the product. Keep container closed to prevent contraination.       Section 8 – Exposure Controls/Personal Protection     Not Applicable       Merican Conference of Governmental industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.       Liquid, Clear, Fluorescent Yellow     Wear protective safery glasses or goggles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties     AlPA (Vapor density (air = 1)) <t< td=""><td>Use of personal precautions</td><td></td></t<>	Use of personal precautions				
Protective equipment to prevent the contamination of skin, eyes, and clothing.   resistant gloves, chemical resistant apron, boots, and full suit will be control airborne concentration then respiratory protection equipment that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements should be used.     Methods and materials used for containment   Collect liquid in an appropriate container.     Cleanup procedures   Do not flush to sewer. Comply with all federal, state, and local regulations.     Precautions for safe handling   Protect container from thysical damage. Wear appropriate personal protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not est, drink or smoke around products.     Recommendations on the conditions for safe storage, Storage/handling incompatibilities.   Store in a cool, dry and well ventilated area away from sources of heat, mercian Conference of Governmental Industrial Hyglenists (ACGIH) Threshold Limit values     Other Exposure Limits (PELS)   AltHA WEEL is 10 mg/m3 for total vapor and aerosol.     Individual Protection Measures   Wear protective safety glasses or goggles, gloves, apron, vapor respirator.     Section 9 – Physical and Chemical And Chemical And Chemical Properties     Individual Protection Measures   Not Applicable     Merica Control   Use mechanical (general) ventilation to control airborne levels below exposure guidelines.     Individual Protection Measures   Not Applicable     Appearance (physical sta					
Methods and materials used for containment     and place in chemical waste container.       Cleanup procedures     Do not flush to sewer. Comply with all federal, state, and local regulations.       Precautions for safe handling     Protect container from physical damage. Wear appropriate personal protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not eat, drink or smoke around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatible materials. Observe all warnings and procautions listed for the product. Keep container closed to prevent contamination.       OSHA Permissible Exposure Limits (PELS)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Cher Exposure Limits     AIHA WEEL is 10 mg/m3 for total vapor and aerosol.       Engineering Control     Use mechanical (general) ventilation to control airborne levels below exposure guidelines.       Moder Masures     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties       Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow       Upper/lower flammability or explosive limits     Not Explosive, LOWER: 2.6% (v) UPPER: 12.5% (v)		resistant gloves, chemical resistant apron, boots, and full suit will be necessary depending on the extent of clean up task. If ventilation does not control airborne concentration then respiratory protection equipment that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements should be used.			
Section     7     Handling and Storage       Precautions for safe handling     Protect container from physical damage. Wear appropriate personal protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not expose controlext.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatibe materials. Observe all warnings and precautions listed for the product. Keep container closed to prevent contamination.       OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit     Not Applicable       Values     Use mechanical (general) ventilation to control airborne levels below exposure guidelines.       Individual Protection Measures     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties     Appearance (physical state, color, etc.)       Liquid, Clear, Fluorescent Yellow     Upper/lower 13	Methods and materials used for containme	and place in chemical waste container.			
Integrations.       Section 7 – Handling and Storage       Precautions for safe handling     Protect container from physical damage. Wear appropriate personal protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not exp. drink or smoke around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatible materials. Observe all warnings and precautions listed for the product. Keep container closed to prevent contamination.       Section 8 – Exposure Controls/Personal Protection     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AIHA WEEL is 10 mg/m3 for total vapor and aerosol.       Use mechanical (general) ventilation to control airborne levels below exposure guidelines.     Vear protective safety glasses or goggles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties     Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow       Upper/lower flammability or explosive limits     Not Explosive; LOWER: 2.6% (v) UPPER: 12.5% (v)     Odor threshold       Odor threshold     Not Applicable     Not Applicable     Section 9 – Physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow	Cleanup procedures				
Precautions for safe handling     Protect container from physical damage. Wear appropriate personal protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not eat, drink or smoke around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatibile materials. Observe all warnings and precautions listed for the product. Keep container closed to prevent contamination.       Section 8 - Exposure Controls/Personal Protection       OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit     Not Applicable       Other Exposure Limits     AlHA WEEL is 10 mg/m3 for total vapor and aerosol.       Use mechanical (general) ventilation to control airborne levels below exposure guidelines.     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow     Liquid, Clear, Fluorescent Yellow       Vapor pressure     133 Pa / 0.1 mmHg     Odor     Slight to no odor       Vapor density (air = 1)     2.10     2.10     PH     8.0 - 9.5       Relative density     1.053 - 1.060     Freezing point (as 50%)     -22°F / 31°C     Slobilify(ig(ies)     <					
Precautions for safe handling     protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not eat, dirik or smoke around products.       Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     Store in a cool, dry and well ventilated area away from sources of heat, moisture and incompatible materials. Observe all warnings and precautions listed for the product. Keep container closed to prevent contamination.       OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AIHA WEEL is 10 mg/m3 for total vapor and aerosol.       Use mechanical (general) ventilation to control airborne levels below exposure guidelines.     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Deform Section 9 – Physical Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow       Upper/lower flammability or explosive limits     Not Applicable       Vapor pressure     133 Pa / 0.1 mmHg       Odd     Not Applicable       Vapor density (air = 1)     2.10       PH     8.0 - 9.5       Relative density     1.053 - 1.060       Freezing point (as 50%)     -22°F / 13°C       Solubility(kies)     Misc	S				
Recommendations on the conditions for safe storage, Storage/handling incompatibilities.     moisture and incompatible materials. Observe al warnings and precautions listed for the product. Keep container closed to prevent contamination.       Section 8 - Exposure Controls/Personal Protection       OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AllHA WEEL is 10 mg/m3 for total vapor and aerosol.       Engineering Control     Use mechanical (general) ventilation to control airborne levels below exposure guidelines.       Individual Protection Measures     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Section 9 - Physical Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow       Upper/lower flammability or explosive limits     Not Explosive; LOWER: 2.6% (v) UPPER: 12.5% (v)       Odor     Slight to no odor       Vapor pressure     133 Pa / 0.1 mmHg       Odor threshold     Not Applicable       Vapor density (air = 1)     2.10       PH     8.0 - 9.5       Relative density     1.053 - 1.060       Freezing point (as 50%)     -22°F / -31°C       Solubilitry(ies)     Miscible in water  <	Precautions for safe handling	protection equipment. Do not expose containers to open flame, excessive heat, or direct sunlight. Use local exhaust over processing area. Do not eat, drink or smoke around products.			
OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AIHA WEEL is 10 mg/m3 for total vapor and aerosol.       Engineering Control     Use mechanical (general) ventilation to control airborne levels below exposure guidelines.       Individual Protection Measures     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties       Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow       Upper/lower flammability or explosive limits     Not Applicable       Odor     Slight to no odor       Vapor pressure     133 Pa / 0.1 mmHg       Odor threshold     Not Applicable       Vapor density (air = 1)     2.10       pH     8.0 - 9.5       Relative density     1.053 - 1.060       Freezing point (as 50%)     -22°F / -31°C       Solubility(ies)     Miscible in water       Initial boliling point and boliling range     311°F / 155°C       Flash point     225°F / 107°C       Evaporation rate (Butyl Acetate = 1)     <1		afe moisture and incompatible materials. Observe all warnings and precautions listed for the product. Keep container closed to prevent			
OSHA Permissible Exposure Limits (PELs)     Not Applicable       American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values     Not Applicable       Other Exposure Limits     AIHA WEEL is 10 mg/m3 for total vapor and aerosol.       Engineering Control     Use mechanical (general) ventilation to control airborne levels below exposure guidelines.       Individual Protection Measures     Wear protective safety glasses or goggles, gloves, apron, vapor respirator.       Section 9 – Physical and Chemical and Chemical Properties       Appearance (physical state, color, etc.)     Liquid, Clear, Fluorescent Yellow       Upper/lower flammability or explosive limits     Not Applicable       Odor     Slight to no odor       Vapor pressure     133 Pa / 0.1 mmHg       Odor threshold     Not Applicable       Vapor density (air = 1)     2.10       pH     8.0 - 9.5       Relative density     1.053 - 1.060       Freezing point (as 50%)     -22°F / -31°C       Solubility(ies)     Miscible in water       Initial boliling point and boliling range     311°F / 155°C       Flash point     225°F / 107°C       Evaporation rate (Butyl Acetate = 1)     <1	Section 8 -	- Exposure Controls/Personal Protection			
American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values   Not Applicable     Other Exposure Limits   AIHA WEEL is 10 mg/m3 for total vapor and aerosol.     Engineering Control   Use mechanical (general) ventilation to control airborne levels below exposure guidelines.     Individual Protection Measures   Wear protective safety glasses or goggles, gloves, apron, vapor respirator.     Section 9 – Physical and Chemical and Chemical Properties     Appearance (physical state, color, etc.)   Liquid, Clear, Fluorescent Yellow     Upper/lower flammability or explosive limits   Not Applicable     Vapor pressure   133 Pa / 0.1 mmHg     Odor   Slight to no odor     Vapor density (air = 1)   2.10     pH   8.0 - 9.5     Relative density   1.053 - 1.060     Freezing point (as 50%)   -22°F / -31°C     Solubility(ies)   Miscible in water     Initial boling point and boling range   311°F / 155°C     Flash point   225°F / 107°C     Evaporation rate (Butyl Acetate = 1)   <1					
Engineering ControlUse mechanical (general) ventilation to control airborne levels below exposure guidelines.Individual Protection MeasuresWear protective safety glasses or goggles, gloves, apron, vapor respirator.Section 9 – Physical and Chemical and Chemical PropertiesAppearance (physical state, color, etc.)Liquid, Clear, Fluorescent YellowUpper/lower flammability or explosive limitsNot Explosive; LOWER: 2.6% (v) UPPER: 12.5% (v)OdorSlight to no odorVapor pressure133 Pa / 0.1 mmHgOdor thresholdNot ApplicableVapor density (air = 1)2.10pH8.0 - 9.5Relative density1.053 - 1.060Freezing point (as 50%)-22°F / -31°CSolubility(ies)Miscible in waterInitial boiling point and boiling range311°F / 155°CFlash point225°F / 107°CEvaporation rate (Butyl Acetate = 1)<1	American Conference of Governmental Industrial Hygienists (ACGIH) Threshold L				
Engineering Control   exposure guidelines.     Individual Protection Measures   Wear protective safety glasses or goggles, gloves, apron, vapor respirator.     Section 9 – Physical and Chemical and Chemical Properties     Appearance (physical state, color, etc.)   Liquid, Clear, Fluorescent Yellow     Upper/lower flammability or explosive limits   Not Explosive; LOWER: 2.6% (v) UPPER: 12.5% (v)     Odor   Slight to no odor     Vapor pressure   133 Pa / 0.1 mmHg     Odor threshold   Not Applicable     Vapor density (air = 1)   2.10     pH   8.0 - 9.5     Relative density   1.053 - 1.060     Freezing point (as 50%)   -22°F / -31°C     Solubility(ies)   Miscible in water     Initial boiling point and boiling range   311°F / 155°C     Flash point   225°F / 107°C     Evaporation rate (Butyl Acetate = 1)   <1	Other Exposure Limits	AIHA WEEL is 10 mg/m3 for total vapor and aerosol.			
Individual Protection MeasuresDescription Protective safety glasses or goggles, gloves, apron, vapor respirator.Section 9 – Physical and Chemical and Chemical PropertiesAppearance (physical state, color, etc.)Liquid, Clear, Fluorescent YellowUpper/lower flammability or explosive limitsNot Explosive; LOWER: 2.6% (v) UPPER: 12.5% (v)OdorSlight to no odorVapor pressure133 Pa / 0.1 mmHgOdor thresholdNot ApplicableVapor density (air = 1)2.10pH8.0 - 9.5Relative density1.053 - 1.060Freezing point (as 50%)-22°F / -31°CSolubility(ies)Miscible in waterInitial boiling range311°F / 155°CFlash point225°F / 107°CEvaporation rate (Butyl Acetate = 1)<1Flammability (solid, gas)Not FlammablePartition coefficient: n-octanol/waterNo Data AvailableAuto-ignition temperature> 700°F / > 370°C	Engineering Control	Use mechanical (general) ventilation to control airborne levels below			
respirator.respirator.Section 9 – Physical and Chemical and Chemical PropertiesAppearance (physical state, color, etc.)Liquid, Clear, Fluorescent YellowUpper/lower flammability or explosive limitsNot Explosive; LOWER: 2.6% (v) UPPER: 12.5% (v)OdorSlight to no odorVapor pressure133 Pa / 0.1 mmHgOdor thresholdNot ApplicableVapor density (air = 1)2.10pH8.0 - 9.5Relative density1.053 - 1.060Freezing point (as 50%)-22°F / -31°CSolubility(ies)Miscible in waterInitial boiling point and boiling range311°F / 155°CFlash point225°F / 107°CEvaporation rate (Butyl Acetate = 1)<1Flammability (solid, gas)Not FlammablePartition coefficient: n-octanol/waterNo Data AvailableAuto-ignition temperature> 700°F / > 370°C					
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		No Data Available			
	Auto-ignition temperature	> 700°F / > 370°C			
Decomposition temperature; and Not Applicable	Decomposition temperature; and	Not Applicable			

Viscosity			~75 cps at	t 60°F				
licectry		Se	· ·					
Section 10 – Stability and Reactivity       Reactivity     Product is stable under typical use temperatures.								
Chemical Stability Product is stable under typical use temperatures.								
Hazardous Reactions Avoid contact with oxidizing materials and strong acids.								
Conditions to Avoid	<b>0 0</b>							
Incompatible Materials Avoid contact with oxidizing agents and strong acids.								
				on monoxide may form		decomposition		
Decomposition Proc	ducts			her organic acids may a				
				logical Informatio				
Likely Routes of Ex	posure		Eye	s / Skin / Ingestion / Inh	alation			
			t Term Exposure		om Long Term	Exposure		
Delayed Effects	Irritation of aff			Irritation of affected ar				
Immediate Effects	Irritation of aff		area	Irritation of affected ar				
Chronic Effects	Not Applicable	Э		Lactic acidosis, stupor following chronic inge		ave been reported		
The numerical measures of toxicity (e.g., acute toxicity estimates such as the LD50 (median lethal dose)) - the estimated amount [of a substance] expected to kill 50% of test animals in a single dose.								
Description of the symptoms associate including symptoms exposure.	ymptoms. This ed with exposu	re to th	ne chemical	Irritation of affected areas. Lactic acidosis, stupor and seizures.				
Listed in the National Toxicology Program (NTP) Report on Carcinogens?	No		Found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs?	No	Found to be a potential carcinogen by OSHA?	No		
		Se	ection 12 – Ecolo	ogical Information				
Ecotoxicity	Low Ecoto							
Persistence and Degradability	Biodegrad	able						
Bioaccumulation	Does not b	Dioaccu	mulate significantly					
Mobility in Soil		Dissolves in water. If product enters soil, it will be highly mobile and may contaminate ground						
Other Adverse Effects	No Data A	vailabl	е					
		Sec	ction 13 – Dispo	sal Consideration	S			
Do not dump into se agencies to determi		nd or ir	nto any bodies of wat	ter. Contact local sewe		e and/or federal		
		Se	ection 14 – Tran	sport Information				
Is product DOT reg	ulated in Non-E			-	No			
			DOT	BULK				
UN number					Not Regulate	ed		
UN proper shipping name						Not Regulated		
Transport hazard class(es)						Not Regulated		
Packing group number					Not Regulated			
Environmental hazards (e.g., identify if it is a marine pollutant according to the International Maritime Dangerous Goods Code (IMDG Code))					Not Regulated			
Guidance on transp International Code f	ort in bulk (acc or the Construe	ording ction a	to Annex II of MARF	POL 73/783 and the ps Carrying Dangerous	Not Regulate	ed		

Any special precautions which an e with, in connection with transport o premises	Not Regulated				
•	atory Ir	nformation (Not indicated an	where else on this SDS)		
Safety Regulations	OSH. Chen	A Hazard Communication Standard:			
Health Regulations	Not A	vailable			
Environmental Regulations	Not A	vailable			
SARA 311/312	mate healt acco	d upon available information, this rial is classified as the following n and/or physical hazards rding to Section 311 & 312	Superfund Amendments and Reauthorization Act of 1986 Title III (SARA) Sections 311 and 312: Immediate (Acute) Health Hazard - No; Delayed (Chronic) Health Hazard - No; Fire Hazard - No; Reactive Hazard - No; Sudden Release of Pressure Hazard - No. Section 313: To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.		
		Health	0		
HMIS		Flammability	1		
		ge/Physical Hazard	0		
		e/Personal Protection	X		
		h (Blue)	0		
NFPA		mability (Red)	1		
0 (no hazard) to 4 (severe risk)		bility/Reactivity (Yellow)	N/A		
	Spec	ial (White)	0		
US Toxic Substance Control Act		Components of this product listed in the February 2019 TSCA Inventory update are designated as ACTIVE or are exempt from Inventory requirements under 40 CFR 720.30			
CA Proposition 65		This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.			
CEPA – Domestic Substances List	(DSL)	All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.			
	S	ection 16 – Other Informatio	n		

This SDS is applicable for all dilutions and containers for this brand of product. The information herein is provided in good faith and believed to be accurate as of the effective revision date shown. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/ user's responsibility to ensure that activities comply with all federal, state, provincial or local law.

Product Dilutions Differentials						
<b>Properties</b> <sup>1</sup>	60%	50%	40%	35%	30%	25%
SAFE-T-THERM <sup>®</sup> AL	60%	50%	40%	35%	30%	25%
Performance Additives and Water	40%	50%	60%	65%	70%	75%
Specific Gravity (15/15°C 60/60°F)	1.048 - 1.053	1.043 - 1.049	1.037 - 1.043	1.033 - 1.038	1.029 - 1.034	1.025 - 1.030
Reserve Alkalinity (minimum)	1	1	1	1	1	1
Freeze Point (maximum)	-49°F / -45°C	-22°F/-31°C	-4°F / -20°C	4°F / -16°C	10°F / -12°C	15°F/-10°C
<sup>1</sup> Data for the concentrate is based on volume of Propylene Glycol; data for mixtures is based on volume of SAFE-T-THERM® AL.						
Revision Date: 8/24/2020						