CNC PLUMBING

MSDS - 2021

Updated: January 2021

GHS SAFETY DATA SHEET

Date Revised: **JAN 2018**

MAINLINE® Flowguard Gold® Medium Bodied Low VOC Solvent Cement Supersedes: **FEB 2016**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **MAINLINE® Flowguard Gold® Medium Bodied Low VOC Solvent Cement**

PRODUCT USE: Low VOC Solvent Cement for CPVC Plastic Pipe

DISTRIBUTOR: Hajoca Corporation
2001 Joshua Road
Lafayette Hill, PA 19444
Tel. 225-295-4212

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2				

GHS LABEL:

Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H335: May cause respiratory irritation	P280: Wear protective gloves/protective clothing/eye protection/face protection
H336: May cause drowsiness or dizziness	P337+P313: Get medical advice/attention
H351: Suspected of causing cancer	P403+P233: Store in a well ventilated place. Keep container tightly closed
EUH019: May form explosive peroxides	P501: Dispose of contents/container in accordance with local regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	30 - 40
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	15 - 25
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	10 - 18

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:

Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke

	HMIS	NFPA
Health	2	2
Flammability	3	3
Reactivity	0	0
PPE	B	

0-Minimal
1-Slight
2-Moderate
3-Serious
4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat; drink or smoke while handling.
Storage: Store in ventilated room or shade below 27°C (80°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above. With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow, medium syrupy liquid		
Odor:	Ketone	**Odor Threshold:**	0.88 ppm (Cyclohexanone)
pH:	Not Applicable		
Melting/Freezing Point:	-108°C (-162°F) Based on first melting component: THF	**Boiling Range:**	66°C (151°F) to 156°C (313°F)
Boiling Point:	67°C (151°F) Based on first boiling component: THF	**Evaporation Rate:**	> 1.0 (BUAC = 1)
Flash Point:	-14°C (7°F) TCC based on THF	**Flammability:**	Category 2
Specific Gravity:	0.986 @23°C (73°F)	**Flammability Limits:**	**LEL:** 1.1% based on Cyclohexanone
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 11.8% based on THF
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	129 mm Hg @ 20°C (68°F)based on THF
Auto-ignition Temperature:	321°C (609.8°F) based on THF	**Vapor Density:**	>2 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Medium bodied
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤490 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD_{50}	LC_{50}	**Target Organs**
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m^3 (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place. Typically at a rate of ≤490 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

DOT, IATA, ADR, IMO/IMDG SHIPPING INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Flammable Liquid
Marine Pollutant:	NO

EXEMPTION: Case quantities in containers of less than one liter may be shipped as LIMITED QUANTITY or CONSUMER COMMODITY, ORM-D

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES (TETRAHYDROFURAN)
UN NUMBER/PACKING GROUP:	1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant, Carc. Cat. 2

Symbols: F, Xi

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

Risk Phrases:
R11: Highly flammable.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:
S2: Keep out of the reach of children
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.

SECTION 16 - OTHER INFORMATION

Specification Information:		All ingredients are compliant with the requirements of the European
Department issuing data sheet:	Safety Health & Environmental Affairs	Directive on RoHS (Restriction of Hazardous Substances).
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	1/30/2018 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for CPVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

GHS SAFETY DATA SHEET

Date Revised: **JAN 2018**
Supersedes: **FEB 2016**

MAINLINE® Purple Low VOC Primer for PVC and CPVC

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **MAINLINE® Purple Low VOC Primer for PVC and CPVC**

PRODUCT USE: Low VOC Primer for PVC and CPVC Plastic Pipe

DISTRIBUTOR: Hajoca Corporation
2001 Joshua Road
Lafayette Hill, PA 19444
Tel. 225-295-4212

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2				

GHS LABEL: 

Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H332: Harmful if inhaled	P280: Wear protective gloves/protective clothing/eye protection/face protection
H335: May cause respiratory irritation	P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
H336: May cause drowsiness or dizziness	P403+P233: Store in a well ventilated place. Keep container tightly closed
H351: Suspected of causing cancer	P501: Dispose of contents/container in accordance with local regulation
EUH019: May form explosive peroxides	

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	15 - 25
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	15 - 25
Acetone	67-64-1	200-662-2	05-2116297713-35-0000	10 - 30
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	25 - 40

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon and smoke

	HMIS	NFPA	
Health	2	2	1-Slight
Flammability	3	3	2-Moderate
Reactivity	0	0	3-Serious
PPE	B		4-Severe

Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat; drink or smoke while handling.
Storage: Store in ventilated room or shade below 27°C (80°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E
Acetone	500 ppm	750 ppm	1000 ppm	N/E	N/E	500 ppm	3000 ppm	750 ppm

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Purple, thin liquid		
Odor:	Ethereal	**Odor Threshold:**	0.88 ppm (Cyclohexanone)
pH:	Not Applicable		
Melting/Freezing Point:	-108°C (-162°F) Based on first melting component: THF	**Boiling Range:**	56°C (133°F) to 156°C (313°F)
Boiling Point:	56°C (133°F) Based on first boiling component: Acetone	**Evaporation Rate:**	> 1.0 (BUAC = 1)
Flash Point:	-20°C (-4°F) TCC based on Acetone	**Flammability:**	Category 2
Specific Gravity:	0.842 @23°C (73°F)	**Flammability Limits:**	**LEL:** 1.1% based on Cyclohexanone
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 12.8% based on Acetone
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	190 mm Hg @ 20°C (68°F) Acetone
Auto-ignition Temperature:	321°C (609.8°F) based on THF	**Vapor Density:**	>2.0 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Water-thin
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤550 g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD_{50}	LC_{50}	**Target Organs**
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m^3 (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	
Acetone	Oral: 5800 mg/kg (rat)	Inhalation 50,100 mg/m^3 (rat)	STOT SE3

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place. Typically at a rate of ≤550 g/l.
Degradability:	Not available
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

DOT, IATA, ADR, IMO/IMDG SHIPPING INFORMATION

Proper Shipping Name:	Flammable Liquid, n.o.s.
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1993
Packing Group:	PG II
Label Required:	Flammable Liquid
Marine Pollutant:	NO

EXEMPTION: Case quantities in containers of less than one liter may be shipped as LIMITED QUANTITY or CONSUMER COMMODITY, ORM-D

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	FLAMMABLE LIQUID, n.o.s. (ACETONE)
UN NUMBER/PACKING GROUP:	1993, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant, Carc. Cat. 2

Symbols: F, Xn

Risk Phrases:
R11: Highly flammable.
R20: Harmful by inhalation.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:
S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.
S46: If swallowed, seek medical advise immediately and show this container or label.

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

SECTION 16 - OTHER INFORMATION

Specification Information:	All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).
Department issuing data sheet:	Safety Health & Environmental Affairs
Training necessary:	Yes, training in practices and procedures contained in product literature.
Reissue date / reason for reissue:	1/30/2018 / Updated GHS Standard Format
Intended Use of Product:	Primer for PVC and CPVC Plastic Pipe

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

GHS SAFETY DATA SHEET

Date Revised: **JAN 2018**

MAINLINE® PVC Clear Special Regular Bodied Low VOC Solvent Cement Supersedes: **FEB 2016**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **MAINLINE® PVC Clear Special Regular Bodied Low VOC Solvent Cement**

PRODUCT USE: Low VOC Solvent Cement for PVC Plastic Pipe

DISTRIBUTOR: Hajoca Corporation
2001 Joshua Road
Lafayette Hill, PA 19444
Tel. 225-295-4212

EMERGENCY: Transportation: CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800.255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health		Environmental		Physical	
Acute Toxicity:	Category 4	Acute Toxicity:	None Known	Flammable Liquid	Category 2
Skin Irritation:	Category 3	Chronic Toxicity:	None Known		
Skin Sensitization:	NO				
Eye:	Category 2				

GHS LABEL: 

Signal Word:
Danger

WHMIS CLASSIFICATION: CLASS B, DIVISION 2
CLASS D, DIVISION 2B

Hazard Statements	Precautionary Statements
H225: Highly flammable liquid and vapor	P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
H319: Causes serious eye irritation	P261: Avoid breathing dust/fume/gas/mist/vapors/spray
H332: Harmful if inhaled	P280: Wear protective gloves/protective clothing/eye protection/face protection
H335: May cause respiratory irritation	P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
H336: May cause drowsiness or dizziness	P403+P233: Store in a well ventilated place. Keep container tightly closed
H351: Suspected of causing cancer	P501: Dispose of contents/container in accordance with local regulation
EUH019: May form explosive peroxides	

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Tetrahydrofuran (THF)	109-99-9	203-726-8	05-2116297729-22-0000	20 - 40
Methyl Ethyl Ketone (MEK)	78-93-3	201-159-0	05-2116297728-24-0000	30 - 45
Cyclohexanone	108-94-1	203-631-1	05-2116297718-25-0000	15 - 25

All of the constituents of this adhesive product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes immediately with plenty of water for 15 minutes and seek medical advice immediately.
Skin contact: Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water. If irritation develops, seek medical advice.
Inhalation: Remove to fresh air. If breathing is stopped, give artificial respiration. If breathing is difficult, give oxygen. Seek medical advice.
Ingestion: Rinse mouth with water. Give 1 or 2 glasses of water or milk to dilute. Do not induce vomiting. Seek medical advice immediately.

Likely Routes of Exposure: Inhalation, Eye and Skin Contact

Acute symptoms and effects:
Inhalation: Severe overexposure may result in nausea, dizziness, headache. Can cause drowsiness, irritation of eyes and nasal passages.
Eye Contact: Vapors slightly uncomfortable. Overexposure may result in severe eye injury with corneal or conjunctival inflammation on contact with the liquid.
Skin Contact: Liquid contact may remove natural skin oils resulting in skin irritation. Dermatitis may occur with prolonged contact.
Ingestion: May cause nausea, vomiting, diarrhea and mental sluggishness.

Chronic (long-term) effects: Category 2 Carcinogen

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Dry chemical powder, carbon dioxide gas, foam, Halon, water fog.
Unsuitable Extinguishing Media: Water spray or stream.
Exposure Hazards: Inhalation and dermal contact
Combustion Products: Oxides of carbon, hydrogen chloride and smoke
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

	HMIS	NFPA	
Health	2	2	1-Slight
Flammability	3	3	2-Moderate
Reactivity	0	0	3-Serious
PPE	B		4-Severe

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep away from heat, sparks and open flame.
Provide sufficient ventilation, use explosion-proof exhaust ventilation equipment or wear suitable respiratory protective equipment.
Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Prevent product or liquids contaminated with product from entering sewers, drains, soil or open water course.
Methods for Cleaning up: Clean up with sand or other inert absorbent material. Transfer to a closable steel vessel.
Materials not to be used for clean up: Aluminum or plastic containers

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid breathing of vapor, avoid contact with eyes, skin and clothing.
Keep away from ignition sources, use only electrically grounded handling equipment and ensure adequate ventilation/fume exhaust hoods.
Do not eat; drink or smoke while handling.
Storage: Store in ventilated room or shade below 27°C (80°F) and away from direct sunlight.
Keep away from ignition sources and incompatible materials: caustics, ammonia, inorganic acids, chlorinated compounds, strong oxidizers and isocyanates.
Follow all precautionary information on container label, product bulletins and solvent cementing literature.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL	OSHA PEL-Ceiling	CAL/OSHA PEL	CAL/OSHA Ceiling	CAL/OSHA STEL
Tetrahydrofuran (THF)	50 ppm	100 ppm	200 ppm	N/E	N/E	200 ppm	N/E	250 ppm
Methyl Ethyl Ketone (MEK)	200 ppm	300 ppm	200 ppm	N/E	N/E	200 ppm	N/E	300 ppm
Cyclohexanone	20 ppm	50 ppm	50 ppm	N/E	N/E	25 ppm	N/E	N/E

Engineering Controls: Use local exhaust as needed.
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Avoid contact with eyes, wear splash-proof chemical goggles, face shield, safety glasses (spectacles) with brow guards and side shields, etc. as may be appropriate for the exposure.
Skin Protection: Prevent contact with the skin as much as possible. Butyl rubber gloves should be used for frequent immersion.
Use of solvent-resistant gloves or solvent-resistant barrier cream should provide adequate protection when normal adhesive application practices and procedures are used for making structural bonds.
Respiratory Protection: Prevent inhalation of the solvents. Use in a well-ventilated room. Open doors and/or windows to ensure airflow and air changes. Use local exhaust ventilation to remove airborne contaminants from employee breathing zone and to keep contaminants below levels listed above.
With normal use, the Exposure Limit Value will not usually be reached. When limits approached, use respiratory protection equipment.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, medium syrupy liquid		
Odor:	Ketone	**Odor Threshold:**	0.88 ppm (Cyclohexanone)
pH:	Not Applicable		
Melting/Freezing Point:	-108°C (-162°F) Based on first melting component: THF	**Boiling Range:**	66°C (151°F) to 156°C (313°F)
Boiling Point:	67°C (151°F) Based on first boiling component: THF	**Evaporation Rate:**	> 1.0 (BUAC = 1)
Flash Point:	-14°C (7°F) TCC based on THF	**Flammability:**	Category 2
Specific Gravity:	0.934 @23°C (73°F)	**Flammability Limits:**	**LEL:** 1.1% based on Cyclohexanone
Solubility:	Solvent portion soluble in water. Resin portion separates out.		**UEL:** 11.8% based on THF
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	129 mm Hg @ 20°C (68°F)based on THF
Auto-ignition Temperature:	321°C (609.8°F) based on THF	**Vapor Density:**	>2 (Air = 1)
Decomposition Temperature:	Not Applicable	**Other Data: Viscosity:**	Regular bodied
VOC Content:	When applied as directed, per SCAQMD Rule 1168, Test Method 316A,VOC content is: ≤510g/l.		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	None in normal use. When forced to burn, this product gives off oxides of carbon, hydrogen chloride and smoke.
Conditions to avoid:	Keep away from heat, sparks, open flame and other ignition sources.
Incompatible Materials:	Oxidizers, strong acids and bases, amines, ammonia

SECTION 11 - TOXICOLOGICAL INFORMATION

Toxicity:	LD_{50}	LC_{50}	**Target Organs**
Tetrahydrofuran (THF)	Oral: 2842 mg/kg (rat)	Inhalation 3 hrs. 21,000 mg/m^3 (rat)	STOT SE3
Methyl Ethyl Ketone (MEK)	Oral: 2737 mg/kg (rat), Dermal: 6480 mg/kg (rabbit)	Inhalation 8 hrs. 23,500 mg/m^3 (rat)	STOT SE3
Cyclohexanone	Oral: 1535 mg/kg (rat), Dermal: 948 mg/kg (rabbit)	Inhalation 4 hrs. 8,000 PPM (rat)	

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	None Known
Mobility:	In normal use, emission of volatile organic compounds (VOC's) to the air takes place. Typically at a rate of ≤510 g/l.
Degradability:	Not readily biodegradable
Bioaccumulation:	Minimal to none.

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Follow local and national regulations. Consult disposal expert.

SECTION 14 - TRANSPORT INFORMATION

DOT, IATA, ADR, IMO/IMDG SHIPPING INFORMATION

Proper Shipping Name:	Adhesives
Hazard Class:	3
Secondary Risk:	None
Identification Number:	UN 1133
Packing Group:	PG II
Label Required:	Flammable Liquid
Marine Pollutant:	NO

EXEMPTION: Case quantities in containers of less than one liter may be shipped as LIMITED QUANTITY or CONSUMER COMMODITY, ORM-D

TDG INFORMATION	
TDG CLASS:	FLAMMABLE LIQUID 3
SHIPPING NAME:	ADHESIVES (TETRAHYDROFURAN)
UN NUMBER/PACKING GROUP:	1133, PG II

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Highly Flammable, Irritant, Carc. Cat. 2

Symbols: F, Xn

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

Risk Phrases:

R11: Highly flammable.
R20: Harmful by inhalation.
R36/37: Irritating to eyes and respiratory system.
R66: Repeated exposure may cause skin dryness or cracking
R67: Vapors may cause drowsiness and dizziness

Safety Phrases:

S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: Avoid contact with eyes.
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S33: Take precautionary measures against static discharges.
S46: If swallowed, seek medical advise immediately and show this container or label.

SECTION 16 - OTHER INFORMATION

Specification Information:		All ingredients are compliant with the requirements of the European
Department issuing data sheet:	Safety Health & Environmental Affairs	Directive on RoHS (Restriction of Hazardous Substances).
Training necessary:	Yes, training in practices and procedures contained in product literature.	
Reissue date / reason for reissue:	1/30/2018 / Updated GHS Standard Format	
Intended Use of Product:	Solvent Cement for PVC Plastic Pipe	

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

BLACK SWAN MFG. CO.

GHS SAFETY DATA SHEET

SECTION 1 - IDENTIFICATION

Manufacturer: Black Swan Mfg. Co. 4540 W. Thomas St. Chicago, IL 60651-3318 Tel.: 800-252-5796 Fax: 773-227-3705 Web Site : www.blackswanmfg.com E-mail : info@blackswanmfg.com	For any Transportation or Medical Chemical Emergencies call: **INFOTRAC** (800) 535-5053 **OR** (352) 323-3500 24 hours per day - 7 days a week
Product Name: Stay Soft Plumbers Putty	**Recommended Use:** Putty used for setting closet bowls, sink strainers and many other applications.

SECTION 2 – HAZARD(S) IDENTIFICATION

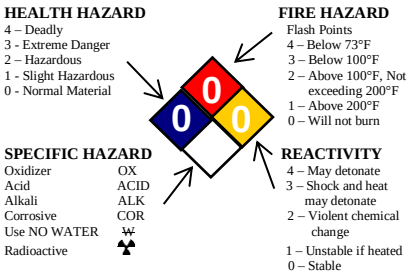
Labels
None

Signal Word
None

HMIS

HEALTH	0
FLAMMABILITY	0
REACTIVITY	0

NFPA



GHS Classification

Health
Acute Toxicity:Not Established
Skin Irritation: Not Established
Eye Irritation: Not Established
Skin Sensitization: NO

Environmental
Acute Aquatic Toxicity: Not Established
Chronic Aquatic Toxicity: Not Established

Physical
None

Hazardous Statements	Precautionary Statements
None	P102 : Keep out of reach of children

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Chemicals	CAS#	EINECS#	REACH Pre-registration Number	Approx %
DISTILLATES, HYDROTREATED LIGHT NAPHTHENIC	64742-53-6	265-156-6	N/A	5-10%
CALCIUM CARBONATE	471-34-1	N/A	N/A	40-80%
BENTONITE CLAY	68953-58-2	N/A	N/A	1-5%
CANOLA OIL	129828-25-7	N/A	N/A	1-5%

*Unlisted ingredients are not classified as hazardous according to OSHA 1910.1200.

SECTION 4 – FIRST-AID MEASURES

Inhalation: None.
Skin: Wash skin thoroughly with soap and water.
Eyes: Flush with water for 15 minutes. If irritation persists, get medical attention.
Ingestion: DO NOT INDUCE VOMITING. Contact physician immediately.

SECTION 5 – FIRE-FIGHTING MEASURES

Fire Hazard: None.
Combustion Products: None.
Extinguishing Media: Carbon Dioxide Gas, Dry Chemical Powder, Water.
Unsuitable Extinguishing Media: None known.
Protective Equipment: None.
Special Fire Fighting Procedures: As appropriate for combustibles in area.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Personal Precautions: None.
Protective Equipment: None.
Emergency Procedures: None.
Environmental Precautions: None.
Methods for Cleaning Up: Clean up by scrapping and put in a container for disposal.

SECTION 7 – HANDLING AND STORAGE

Handling	**Storage**
No special precautions.	No special precautions.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits

This product is not classified as hazardous according to OSHA 1910.1200.

Engineering Controls: A source of running water to flush or wash the eyes and skin in case of contact. Use local exhaust as needed.
Ventilation: Local ventilation is adequate.
Personal Protective Equipment – Respiratory: None. **Skin:** None. **Eyes:** None.

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

Appearance:	Beige Putty	**Flash Point**:	Not Established	**Vapor Pressure**:	Not Established
Odor:	Mild Petroleum	**Specific Gravity**:	2.14	**Flammability**:	Not Established
pH:	Not Established	**Solubility (H2O):**	Insoluble	**Flammability Limits**:	LEL – Not Established
Melting Point:	Not Established	**Evaporation Rate**:	Not Established		UEL – Not Established
Freezing Point:	Not Established	**Vapor Density**:	Not Established		
Boiling Point:	Not Established	**VOC**:	0 g/l		

SECTION 10 – STABILITY AND REACTIVITY

Stability: Stable.
Hazardous polymerization: Will not occur.
Conditions to avoid: None.
Incompatible materials: Strong oxidizers.
Hazardous decomposition products: Carbon Dioxide and Carbon Monoxide may be released on burning.

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity

This product is not classified as hazardous according to OSHA 1910.1200.

Likely Routes of Exposure: Skin Contact and Ingestion.
Symptoms and Effect - Inhalation: None. **Skin Contact:** None. **Eye Contact:** None. **Ingestion:** None.
Long-Term Effect: None known.
Pre-Existing Conditions: None known.

SECTION 12 – ECOLOGICAL INFORMATION

Ecotoxicity: None known.
Persistance & Degradability: None known.
Bioaccumulative Potential: None known.
Mobility in soil: None known.

SECTION 13 – DISPOSAL CONSIDERATION

Dispose of product or container in accordance with federal, state or local regulations.

SECTION 14 – TRANSPORTATION INFORMATION

D.O.T. (U.S.): Not Regulated.

SECTION 15 – REGULATORY INFORMATION

Precautionary Label Information: None.
Risk Phrases: None.
Safety Phrases: S2-Keep out of reach of children.

SECTION 16 – OTHER INFORMATION

Information on this form is furnished solely for the purpose of compliance with the Occupational Safety and Health Act and shall not be used for any other purpose. Black Swan Mfg. Co. urges the customers receiving this Material Safety Data Sheet to study it carefully to become aware of the hazards, if any, of the product involved. In the interest of safety, you should notify your employees, agents and contractors of the information on the sheets. **DATE: 01/01/2015**

GHS SAFETY DATA SHEET

Date Revised: **MAR 2015**

Weld-On® Soldering Flux Paste

Supersedes: **NOV 2014**

SECTION I - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Weld-On®Soldering Flux Paste**

PRODUCT USE: Soldering Flux

SUPPLIER:

MANUFACTURER: IPS Corporation
17109 South Main Street, Gardena, CA 90248-3127
P.O. Box 379, Gardena, CA 90247-0379
Tel. 1-310-898-3300

EMERGENCY: Transportation: CHEMTEL Tel. 800-255-3924, +1 813-248-0585 (International) **Medical:** CHEMTEL Tel. 800-255-3924, +1 813-248-0585 (International)

SECTION 2 - HAZARDS IDENTIFICATION

GHS CLASSIFICATION:

Health	Environmental	Physical
Oral: Not Classified	Aquatic Environment: Not Classified	None Known
Dermal: Not Classified	Acute aquatic toxicity: Not Classified	
Inhalation: Not Classified	Chronic aquatic toxicity: Not Classified	
Skin Corrosion/Irritation: Not Classified		

GHS LABEL: 

Signal Word:
WARNING

WHMIS CLASSIFICATION: None

Hazard Statements	Precautionary Statements
H302 - Harmful if swallowed.	P102 - Keep out of reach of children.
H315 - Causes skin irritation.	P262 - Do not get in eyes, on skin, or on clothing.
H319 - Causes serious eye irritation.	P264 - Wash hands thoroughly after handling.
	P281 - Use personal protective equipment as required.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

	CAS#	EINECS #	REACH Pre-registration Number	CONCENTRATION % by Weight
Zinc Chloride	7646-85-7	231-592-0	05-2115142103-66-0000	10-25
Ammonium Chloride	12125-02-9	235-186-4	05-2115141987-35-0000	10-25
Petrolatum	8009-03-8	232-373-2	05-2115142117-57-0000	70-90

All of the constituents of this product are listed on the TSCA inventory of chemical substances maintained by the US EPA, or are exempt from that listing.
* Indicates this chemical is subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 (40CFR372).
# indicates that this chemical is found on Proposition 65's List of chemicals known to the State of California to cause cancer or reproductive toxicity.

SECTION 4 - FIRST AID MEASURES

Contact with eyes: Flush eyes with plenty of water for 15 minutes. Get medical attention if irritation develops or persists.
Skin contact: Wash exposed area with mild soap and water. Get medical attention if irritation develops or persists.
Inhalation: Fresh air should alleviate any respiratory discomfort. If breathing difficulties develop or persist, get medical attention.
Ingestion: Do not induce vomiting. Get immediate medical help.

SECTION 5 - FIREFIGHTING MEASURES

Suitable Extinguishing Media: Water Fog, CO2 Foam, Dry Chemical
Unsuitable Extinguishing Media: Water in a straight hose stream may cause fire to spread and should be used as a cooling medium only
Exposure Hazards: Mists or sprays could ignite at temperatures below the indicated flash point.
Combustion Products: Zinc, chlorine and HLC may evolve
Protection for Firefighters: Self-contained breathing apparatus or full-face positive pressure airline masks.

	HMIS	NFPA	
Health	1		1-Slight
Flammability	1		2-Moderate
Reactivity	0		3-Serious
PPE	B		4-Severe

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions: Clear spills to avoid slip/trip hazards. Non-essential personnel should not enter area due to slipping hazards. Prevent contact with skin or eyes (see section 8).
Environmental Precautions: Do not flush into sewers, drains, natural waterways or soil.
Methods for Cleaning up: Wipe up spills as required.
Materials not to be used for clean up:

SECTION 7 - HANDLING AND STORAGE

Handling: Avoid prolonged or repeated contact with skin, clothing and/or breathing of fumes when handling/soldering.
Keep containers closed and upright when not in use.
Wash thoroughly after handling to remove all residue. Wash exposed areas before eating, drinking, smoking, or leaving work area. Launder contaminated clothing.
Storage: Store flux at ambient temperatures.
Follow all precautionary information on container label, product bulletins and literature. Empty containers may contain residue - do not re-use.

SECTION 8 - PRECAUTIONS TO CONTROL EXPOSURE / PERSONAL PROTECTION

EXPOSURE LIMITS:

Component	ACGIH 8hr TLV	ACGIH STEL	OSHA 8hr PEL	OSHA 15 min STEL	OSHA Ceiling	CAL/OSHA 8hr PEL	CAL/OSHA 15 minSTEL	CAL/OSHA Ceiling
Zinc Chloride (fume)	1 mg/m3	2 mg/m3	1 mg/m3	2 mg/m3	N/E	1 mg/m3	2 mg/m3	N/E
Ammonium Chloride (fume	10 mg/m3	20 mg/m3	10 mg/m3	20 mg/m3	N/E	10 mg/m3	20 mg/m3	N/E
Petrolatum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Engineering Controls: Use local exhaust or dilution ventilation as appropriate to control fume to below permissible exposure limits
Monitoring: Maintain breathing zone airborne concentrations below exposure limits.
Personal Protective Equipment (PPE):
Eye Protection: Safety glasses (ANSI Z-87 or equivalent).
Skin Protection: Neoprene rubber or other chemical resistant material.
Coveralls recommended to prevent skin contact.
Respiratory Protection: Use NIOSH/MSHA approved respirators when fume concentration will exceed permissible exposure limits.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Tan paste		
Odor:	Petroleum Odor	**Odor Threshold:**	Not Available
pH:	Not Applicable		
Melting/Freezing Point:	Not Available		
Boiling Point:	Not Applicable	**Evaporation Rate:**	Not Applicable
Flash Point:	> 400°F (204° C)	**Flammability:**	N/A
Specific Gravity:	1.06 (H20 = 1)	**Flammability Limits:**	**LEL:** N/A
Solubility:	Insoluble		**UEL:** N/A
Partition Coefficient n-octanol/water:	Not Available	**Vapor Pressure:**	<0.01 @ 68°F (20° C)
Auto-ignition Temperature:	Not Available	**Vapor Density:**	Not Applicable
Decomposition Temperature:	Not Available	**Other Data: Viscosity:**	Not Available
VOC Content:	0%		

SECTION 10 - STABILITY AND REACTIVITY

Stability:	Stable
Hazardous decomposition products:	Toxic fumes of zinc, chlorine and HCL may evolve during soldering
Conditions to avoid:	None known. Avoid breathing soldering fumes.
Incompatible Materials:	None known.

SECTION 11 - TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation and Ingestion

Acute symptoms and effects:

Inhalation: Irritation to respiratory system from solder fumes. May cause allergy / asthma symptoms or breathing difficulties.

Eye Contact: Severe eye irritation and injury may occur.

Skin Contact: May cause skin irritation and persistent dermal irritation/allergic reaction.

Ingestion: Nausea, vomiting, irritation to digestive system.

Chronic (long-term) effects: Irritation from continued skin contact can occur. Continuous exposure to fumes may result in lung damage and irritation of respiratory tract.

Toxicity:	LD_{50}	LC_{50}
Zinc Chloride	350 mg/kg (oral rat)	LCLo: 1960 mg/m^3/10 mins (rat)
Ammonium Chloride	165 0mg/kg (oral rat)	Not Available
Petrolatum	Oral-Rat N/D	Inhalation-Rat:N/D

Reproductive Effects	Teratogenicity	Mutagenicity	Embryotoxicity	Sensitization to Product	Synergistic Products
Not Established	Not Established	Not Established	Not Established	Not Established	Not Established

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:	***Zinc Chloride***	Food Chain Concentration Potential	None
		WATERFOWL TOXICITY	N/A
		BOD	None
		AQUATIC TOXICITY:	7.2 ppm/96 hr/medium bluegill/TLm
	Ammonium Chloride	Food Chain Concentration Potential	None
		WATERFOWL TOXICITY	N/A
		BOD	N/A
		AQUATIC TOXICITY:	6 ppm/96 hr/sunfish TLm
	Petrolatum	Food Chain Concentration Potential	N/D
		WATERFOWL TOXICITY	N/D
		BOD	N/D
		AQUATIC TOXICITY:	N/D

Mobility: Not Available

Degradability: Not Available

Bioaccumulation: Pimephales promelas (fathead minnow) - 63 days Bioconcentration factor (BCF): 21,000

SECTION 13 - WASTE DISPOSAL CONSIDERATIONS

Non-regulated solid waste. Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State and Local regulations at an approved landfill.

SECTION 14 - TRANSPORT INFORMATION

Proper Shipping Name:	Not Regulated
Hazard Class:	N/A
Secondary Risk:	N/A
Identification Number:	N/A
Packing Group:	N/A
Label Required:	N/A
Marine Pollutant:	N/A

SECTION 15 - REGULATORY INFORMATION

Precautionary Label Information: Irritant

Symbols: Xi

Ingredient Listings: USA TSCA, Europe EINECS, Canada DSL, Australia AICS, Korea ECL/TCCL, Japan MITI (ENCS)

Risk Phrases: R36/37: Irritating to eyes and respiratory system. R66: Repeated exposure may cause skin dryness or cracking

Safety Phrases: S2: Keep out of the reach of children S25: Avoid contact with eyes.
S9: Keep container in a well-ventilated place.

SECTION 16 - OTHER INFORMATION

Specification Information:

Department issuing data sheet: IPS, Safety Health & Environmental Affairs

E-mail address: <EHSinfo@ipscorp.com>

All ingredients are compliant with the requirements of the European Directive on RoHS (Restriction of Hazardous Substances).

Training necessary: Yes, training in practices and procedures contained in product literature.

Reissue date / reason for reissue: 3/6/2015 / Updated GHS Standard Format

Intended Use of Product: Solder flux

This product is intended for use by skilled individuals at their own risk. The information contained herein is based on data considered accurate based on current state of knowledge and experience. However, no warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

Safety Data Sheet

24 Hour Emergency Phone Numbers
Medical/Poison Control:
In U.S.: Call 1-800-222-1222

Outside U.S.: Call your local poison control center

Transportation/National Response Center:

1-800-535-5053
1-352-323-3500

NOTE: The National ResponseCenter emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

IMPORTANT: Provide this information to employees, customers, and users of this product. Read this SDS before handling or disposing of this product. This product is covered by the OSHA Hazard Communication Standard and this document has been prepared in accordance with requirements of this standard. All abbreviated terms used in this MSDS are further described in Section 16.

1. Identification

This Safety Data Sheet is available in American Spanish upon request.
Los Datos de Serguridad pueden obtenerse en Espanol si lo riquiere.

Product Name:	Fireblock Foam Polyurethane Foam Sealant	**Revision Date:**	6/19/2015
Product UPC Number:	44242	**Supercedes Date:**	New SDS
Product Use/Class:	Foam Sealant	**SDS No:**	00077006004
Manufacturer:	DAP Products Inc. 2400 Boston Street Suite 200 Baltimore, MD 21224-4723 888-327-8477 (non - emergency matters)		
Preparer:	Regulatory Department		

2. Hazards Identification

EMERGENCY OVERVIEW: DANGER!Extremely flammable liquid and vapor. Vapors may cause flash fire or explosion. Vapors can form an ignitable mixture with air. Vapors can flow along surfaces to a distant ignition source and flash back. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Keep container closed and away from heat, sparks, and open flame. Store away from caustics and oxidizers. May cause nausea, headaches, and dizziness. May cause eye, skin, nose, throat and respiratory tract irritation. Use only with adequate ventilation. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. May cause sensitization by inhalation and skin contact. Contents under pressure. Do not puncture can. Exposure to temperatures above 120 'F may cause can to rupture. The primary adverse health effects of this product are related to the Polymeric Isocyanate (MDI) component. Therefore, adequate ventilation should be provided to avoid exceeding the exposure limits of these components (See Section 8). The likelihood of exceeding these limits are low due to the low concentration of vapor produced during normal use. However, if used indoors, mechanical ventilation or exhaust should be provided during use and until product is cured. This product has strong adhesive-like characteristics and will adhere aggressively to skin and other surfaces. If accidental contact occurs, follow the appropriate first-aid procedure described in Section 4 of this MSDS. MDI vapor can irritate the respiratory tract causing runny nose, sore throat, coughing and reduce lung function.

GHS Classification

Acute Tox. 4 Inhalation, Carc. 2, Comp. Gas, Fl Aer, 1, Flam. Gas 1, Lact. Effect, Resp. Sens. 1, Skin Sens. 1

Symbol(s) of Product

Signal Word

Danger

Possible Hazards

24% of the mixture consists of ingredients of unknown acute toxicity

GHS HAZARD STATEMENTS

Flammable Gas, category 1	H220	Extremely flammable gas.
Flammable Aerosol, category 1	H222	Extremely flammable aerosol.
Compressed Gas	H280	Contains gas under pressure; may explode if heated.
Skin Sensitizer, category 1	H317	May cause an allergic skin reaction.
Acute Toxicity, Inhalation, category 4	H332	Harmful if inhaled.
Respiratory Sensitizer, category 1	H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carcinogenicity, category 2	H351	Suspected of causing cancer. Classified as Category 2 based on limited evidence on human and/or animal studies. Mixtures with concentrations of suspected carcinogens ingredients at concentration present between 0.1% and 1.0% labelling the SDS will be optional depending on authorities. If Category 2 carcinogenic present at a concentration of 1% or above labelling the SDS will be expected. Routes of exposure are dependant on ingredient form.
Effects on or via lactation	H362	May cause harm to breast-fed children.

GHS LABEL PRECAUTIONARY STATEMENTS

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P263	Avoid contact during pregnancy/while nursing.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P281	Use personal protective equipment as required.
P285	In case of inadequate ventilation wear respiratory protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P377	If eye irritation persists:
P381	Eliminate all ignition sources if safe to do so.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do no expose to temperatures exceeding 50°C/ 122°F.

GHS ADDITIONAL INFORMATION

H371	Contains one or more Category 2 Specific Organ Toxicants at greater than 1.0%. A Safety Data Sheet shall be available for the mixture upon request.

GHS SDS PRECAUTIONARY STATEMENTS

P363 Wash contaminated clothing before reuse.

3. Composition/Information on Ingredients

Chemical Name	CAS-No.	Wt. %	GHS Symbols	GHS Statements
Tris(2-chloro-1-methylethyl) phosphate	13674-84-5	10-25	GHS03-GHS06	H270-302-312-331
Isobutane	75-28-5	2.5-10	GHS03-GHS07-GHS08	H270-332-336-371
Dimethyl ether	115-10-6	2.5-10	GHS03	H270
4,4'-Methylenediphenyl diisocyanate (MDI)	101-68-8	2.5-10	GHS03-GHS06-GHS08	H270-315-317-319-330-334-335-351-373
Alkanes, chloro-	61788-76-9	2.5-10	GHS03	H270-362
Propane	74-98-6	1.0-2.5	GHS03-GHS07	H270-332-336
n-Butane	106-97-8	1.0-2.5	GHS03-GHS07	H270-332-336

The text for GHS Hazard Statements shown above (if any) is given in the "Other information" Section.

4. First-aid Measures

FIRST AID - INHALATION: If you experience difficulty in breathing, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately.

FIRST AID - SKIN CONTACT: Wash skin with soap and water for 15 minutes. Get medical aid if symptoms persist. Use a rag to remove excess foam from skin and remove contaminated clothing. Use of a solvent, such as acetone (nail polish remover) or mineral spirits, may help in removing uncured foam residue from clothing or other surfaces (avoid eye contact). Cured foam may be physically removed by persistent washing with soap and water. If irritation develops, use mild skin cream. If irritation persists, obtain medical attention.

FIRST AID - EYE CONTACT: In case of contact, immediately flush eyes with large quantities of water for at least 15 minutes until irritation subsides. Get medical attention immediately.

FIRST AID - INGESTION: If swallowed, DO NOT INDUCE VOMITING. Get medical attention immediately.

5. Fire-fighting Measures

UNUSUAL FIRE AND EXPLOSION HAZARDS: Closed containers may burst if exposed to extreme heat or fire. Containers may explode if exposed to extreme heat. Empty containers retain product residue (liquid and/or vapor). Vapor can ignite potentially causing an explosion.

SPECIAL FIREFIGHTING PROCEDURES: Wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear. Use water spray to cool exposed surfaces.

EXTINGUISHING MEDIA: Carbon Dioxide, Dry Chemical, Foam, Water Fog

6. Accidental Release Measures

ENVIRONMENTAL MEASURES: No Information

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: NOTE: Review fire hazards before proceeding with clean up. Immediately eliminate sources of ignition. Keep people away from and upwind of spill/leak. Contain spilled material and remove with inert absorbent. Dispose of contaminated absorbent, container and unused contents in accordance with local, state and federal regulations. Scrape up dried material and place into containers. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Use personal protective equipment as necessary. Read all product instructions before using. Personal protective equipment should include impervious gloves, protective eye wear, and suitable work clothes. Uncured product is very sticky, so carefully remove the bulk of the foam by scraping it up and then immediately remove residue with a rag and solvent such as polyurethane cleaner, mineral spirits, acetone (nail polish remover), paint thinner, etc. Once the product has cured, it can only be removed physically by scraping, buffing, etc. Dispose as plastic waste (foam plastic) in accordance with all applicable guidelines and regulations.

7. Handling and Storage

HANDLING: KEEP OUT OF REACH OF CHILDREN!DO NOT TAKE INTERNALLY. Remove all sources of ignition. Make sure

nozzle is directed away from yourself prior to discharge. Keep away from open flames, hot surfaces and sources of ignition. Provide adequate ventilation. Avoid heat, sparks and open flames. Wear appropriate personal protection. Avoid breathing vapor and contact with eyes, skin and clothing. Use only with adequate ventilation. Ensure fresh air entry during application and drying. Empty containers retain product residue (liquid and/or vapor). Vapor can ignite potentially causing an explosion. Wash thoroughly after handling. Contains isocyanates. See information supplied by the manufacturer. Persons allergic to isocyanates, and particularly those suffering from asthma or other respiratory conditions, should not work with isocyanates.

STORAGE: Store away from sources of ignition and heat. Protect material from direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store at temperatures above 120 degrees F. Store containers away from excessive heat and freezing. Store away from caustics and oxidizers.

8. Exposure Controls/Personal Protection

Ingredients with Occupational Exposure Limits

Chemical Name	ACGIH TLV-TWA	ACGIH-TLV STEL	OSHA PEL-TWA	OSHA PEL-CEILING
Tris(2-chloro-1-methylethyl) phosphate	N.E.	N.E.	N.E.	N.E.
Isobutane	N.E.	1000 ppm STEL	N.E.	N.E.
Dimethyl ether	N.E.	N.E.	N.E.	N.E.
4,4'-Methylenediphenyl diisocyanate (MDI)	0.005 ppm TWA Methylene bisphenyl isocyanate (MDI)	N.E.	N.E.	0.02 ppm Ceiling, 0.2 mg/m3 Ceiling
Alkanes, chloro-	N.E.	N.E.	N.E.	N.E.
Propane	1000 ppm TWA Aliphatic hydrocarbon gases: Alkane C1-4	N.E.	1000 ppm TWA, 1800 mg/m3 TWA	N.E.
n-Butane	N.E.	1000 ppm STEL	N.E.	N.E.

Further Advice: MEL = Maximum Exposure Limit OES = Occupational Exposure Standard SUP = Supplier's Recommendation Sk = Skin Sensitizer N.E. = Not Established

Personal Protection

RESPIRATORY PROTECTION: No personal respiratory protective equipment normally required. If concentrations exceed the exposure limits specified, use of a NIOSH-approved supplied air respirator is recommended. Where the protection factor is exceeded, use of a Self Contained Breathing Apparatus (SCBA) may be necessary. A respiratory protection program that meets the OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

SKIN PROTECTION: Wear solvent impervious gloves.

EYE PROTECTION: Goggles or safety glasses with side shields.

OTHER PROTECTIVE EQUIPMENT: Provide eyewash and solvent impervious apron if body contact may occur.

HYGIENIC PRACTICES: Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing before re-use.

9. Physical and Chemical Properties

Appearance:	Orange	**Physical State:**	Foam
Odor:	Slight	**Odor Threshold:**	Not Established
Density, g/cm3:	1.24 - 1.24	**pH:**	Not Applicable
Freeze Point, °C:	Not Established	**Viscosity (mPa.s):**	Not Established
Solubility in Water:	Not Established	**Partition Coeff., n-octanol/water:**	Not Established
Decomposition Temperature, °C:	Not Established	**Explosive Limits, %:**	N.I. - N.I.
Boiling Range, °C:	N.I. - N.I.	**Auto-Ignition Temperature, °C**	Not Established
Minimum Flash Point, °C:	No Information	**Vapor Pressure, mmHg:**	No Information
Evaporation Rate:	Slower Than n-Butyl Acetate	**Flash Method:**	Not Applicable
Vapor Density:	Heavier Than Air	**Flammability:**	No Information
Combustibility:	Does not support combustion		

(See "Other information" Section for abbreviation legend)
(If product is an aerosol, the flash point stated above is that of the propellant.)

10. Stability and Reactivity

STABILITY: Stable under recommended storage conditions.

CONDITIONS TO AVOID: Excessive heat and freezing. Keep away from open flames, hot surfaces and sources of ignition. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

INCOMPATIBILITY: Open flames, hot surfaces and sources of ignition. Incompatible with strong bases and oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Normal decomposition products, i.e., COx, NOx.

11. Toxicological Information

EFFECT OF OVEREXPOSURE - INHALATION: Vapors may be irritating to eyes, nose, throat, and lungs. Inhalation of high concentrations may cause headache, nausea, and dizziness.

EFFECT OF OVEREXPOSURE - SKIN CONTACT: May cause sensitization by skin contact. May cause localized irritation, reddening or swelling. Prolonged or repeated exposure may lead to sensitization and/or contact dermatitis. This product has strong adhesive-like characteristics and will adhere aggressively to skin and other surfaces. If accidental contact occurs, follow the appropriate first-aid procedure described in Section 4 of this MSDS.

EFFECT OF OVEREXPOSURE - EYE CONTACT: Direct eye contact may cause irritation. Mist and vapors may cause eye irritation. Foam contact can cause physical damage due to adhesive character.

EFFECT OF OVEREXPOSURE - INGESTION: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

CARCINOGENICITY: No Information

EFFECT OF OVEREXPOSURE - CHRONIC HAZARDS: No Information

PRIMARY ROUTE(S) OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Contact

Acute Toxicity Values
The acute effects of this product have not been tested. Data on individual components are tabulated below

CAS-No.	Chemical Name	Oral LD50	Dermal LD50	Vapor LC50
13674-84-5	Tris(2-chloro-1-methylethyl) phosphate	500 mg/kg Rat	1230 mg/kg Rabbit	5 mg/L Rat
75-28-5	Isobutane	N.I.	N.I.	658 mg/L Rat
115-10-6	Dimethyl ether	>2000 mg/kg	>2000 mg/kg	308.5 mg/L Rat
101-68-8	4,4'-Methylenediphenyl diisocyanate (MDI)	31600 mg/kg Rat	9400 mg/kg Rabbit	N.I.
85535-85-9	Alkanes, chloro-	15000 mg/kg Rat	13500 mg/kg Rabbit	1650 mg/L Rat

74-98-6	Propane	Not an exposure route	N.I.	658 mg/L Rat
106-97-8	n-Butane	Not an exposure route	N.I.	658 mg/L Rat

N.I. = No Information

12. Ecological Information

ECOLOGICAL INFORMATION: No Information

13. Disposal Information

DISPOSAL INFORMATION: Residues and spilled material are hazardous waste due to ignitability. Contents under pressure. Dispose of material in accordance with all federal, state and local regulations. State and Local regulations/restrictions are complex and may differ from Federal regulations. Responsibility for proper waste disposal is with the owner of the waste. Liquids cannot be disposed of in a landfill. Do not flush into surface water or sanitary sewer system. Do not empty into drains. Do not re-use empty containers. The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Before disposing of containers, relieve container of any remaining product and pressure. Empty cylinders, once relieved of all pressure, can be disposed of as non-hazardous waste.

14. Transport Information

SPECIAL TRANSPORT PRECAUTIONS: No Information

DOT UN/NA Number:	UN1950
DOT Proper Shipping Name:	Aerosols, flammable
DOT Technical Name:	N.A.
DOT Hazard Class:	2.1
Hazard SubClass:	N.A.
Packing Group:	N.A.

15. Regulatory Information

U.S. Federal Regulations:

CERCLA - SARA Hazard Category

This product has been reviewed according to the EPA 'Hazard Categories' promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

Fire Hazard, Pressure Hazard, Acute Health Hazard, Chronic Health Hazard

SARA SECTION 313:

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR part 372:

Chemical Name	CAS-No.
Polymeric diphenylmethane diisocyanate	9016-87-9
4,4'-Methylenediphenyl diisocyanate (MDI)	101-68-8

TOXIC SUBSTANCES CONTROL ACT:

All ingredients in this product are either on TSCA inventory list, or otherwise exempt.
This product contains the following chemical substances subject to the reporting requirements of TSCA 12(B) if exported from the United States:

No TSCA 12(b) components exist in this product.

CALIFORNIA PROPOSITION 65 CARCINOGENS AND REPORODUCTIVE TOXINS

CALIFORNIA PROPOSITION 65: No Information

International Regulations: As follows -

CANADIAN WHMIS:

This SDS has been prepared in compliance with Controlled Product Regulations except for the use of the 16 headings.

WHMIS Class Consumer Commodity

16. Other Information

Revision Date: 6/19/2015 **Supersedes Date:** New MSDS

Reason for revision: HazCom2012/GHS Conversion

Datasheet produced by: Regulatory Department

HMIS Ratings:

Health:	2	**Flammability:**	4	**Reactivity:**	0	**Personal Protection:**	X

VOC Less Water Less Exempt Solvent, g/L 194.0

VOC Material, g/L: 194

VOC as Defined by California Consumer Product Regulation, Wt/Wt%: 15.6

Text for GHS Hazard Statements shown in Section 3 describing each ingredient:

H270	May cause or intensify fire; oxidiser.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H351	Suspected of causing cancer. Classified as Category 2 based on limited evidence on human and/or animal studies. Mixtures with concentrations of suspected carcinogens ingredients at concentration present between 0.1% and 1.0% labelling the SDS will be optional depending on authorities. If Category 2 carcinogenic present at a concentration of 1% or above labelling the SDS will be expected. Routes of exposure are dependant on ingredient form.
H362	May cause harm to breast-fed children.
H371	May cause damage to organs. classified Category 2 evidence from animal studies suggest harmful . Cell death, adverse change in biochemistry, haematology or urinalysis parameters, Central or peripheral nervous system and effects senses. Multifocal or diffuse necrosis, fibrosis or granuloma formation in organs.
H373	May cause damage to organs through prolonged or repeated exposure.

Icons for GHS Pictograms shown in Section 3 describing each ingredient:

GHS03

GHS06 

GHS07 

GHS08 

Legend: N.A. - Not Applicable, N.E. - Not Established, N.D. - Not Determined

DAP believes the data and statements contained herein are accurate as of the date hereof. They are offered in good faith as typical values and not as a product specification. NO WARRANTY OF MERCHANTABILITY, WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED, IS MADE WITH REGARD TO THE INFORMATION HEREIN PROVIDED OR THE PRODUCT TO WHICH THE INFORMATION REFERS. Since thisdocument is intended only as a guide to the appropriate use and precautionary handling of the referenced product by a properly trained person, it is therefore the responsibility of the user to (i) review the recommendations with due consideration for the specific context of the intended use and (ii) determine if they are appropriate.

SAFETY DATA SHEET

RECTORSEAL® TRU-BLU™

Vibration resistant pipe thread sealant

Section 1 – Product and Company Information

Product Name
Rectorseal® Tru-Blue™

Product Codes
31300, 31431, 31551, 31552, 31631, 31780, 31782, 31785

Chemical Family
Organic

Use
Pipe thread sealant

Manufacturer's Name
The RectorSeal Corporation
2601 Spenwick Drive
Houston, Texas 77055 USA

Date of Validation
June 14, 2016

Date of Preparation
June 14, 2016

HMIS Codes

Health	1
Flammability	2
Reactivity	0
PPI	B

Emergency Telephone No.
Chemtrec 24 Hours
(800)-424-9300 USA
(703)-527-3887 International

Technical Service Telephone No.
(800)-231-3345 or (713)-263-8001

Section 2 – Hazards Identification

EMERGENCY OVERVIEW

OSHA Hazards
Combustable

Target Organs
Not Classified

GHS CLASSIFICATION

Physical Hazards
Combustable liquid (Category 4)

Health Hazards

Acute Toxicity:
Oral: Not Classified
Dermal: Not Classified
Inhalation: Not Classified

Skin Corrosion/Irritation: Not Classified
Serious Eye Damage/Eye Irritation: Not Classified
Skin Sensitization: Not Classified
Respiratory Sensitization: Not Classified
Germ Cell Mutagenicity: Not Classified
Carcinogenicity: See Section 11
Reproductive Toxicology: Not Classified
Target Organ Systemic Toxicity - Single Exposure: Not Classified
Target Organ Systemic Toxicity - Repeated Exposure: Not Classified

Aspiration Toxicity: Not Classified

GHS Label elements, including precautionary statements

GHS07: Exclamation Mark
Signal Word: **Warning**

Hazard Statements
H303 - May be harmful if swallowed.
H313 - May be harmful in contact with skin.
H335 + H336 - May cause respiratory irritation, and drowsiness or dizziness.

Precautionary Statements
P102 - Keep out of reach of children.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P262 - Do not get in eyes, on skin, or on clothing.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362 - Take off contaminated clothing and wash before reuse.

EUH066 - Repeated exposure may cause skin dryness or cracking
Precautionary Statements - EU No. 1272/2008

Summary Of Acute Hazards

Irritation to eyes, nose and throat; drowsiness, narcosis, tremors and other CNS effects at high concentration.

Route Of Exposure, Signs And Symptoms

INHALATION
Nasal and respiratory irritation, dizziness, narcosis, headache, nausea, CNS depression and unconsciousness.

EYE CONTACT
Watering, blurred vision, inflammation and irritation which can result in corneal injury.

SKIN CONTACT

Irritation, dermatitis.

INGESTION
Nausea, vomiting; CNS depression; irritation of gastrointestinal tract, liver and peritoneal wall; lung congestion.

SUMMARY OF CHRONIC HAZARDS
Skin irritation and dermatitis. Possible liver and kidney damage.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE
Individuals with pre-existing or chronic diseases of the eyes, skin, respiratory system, cardiovascular system, gastrointestinal system, liver or kidneys may have increased susceptibility to excessive exposures.

Section 3 – Composition/Information on Ingredients

Ingredient:	Diacetone Alcohol
Percentage By Weight:	20-30
CAS Number:	123-42-2
EC#:	204-626-7

Section 4 – First Aid Measures

If inhaled:	If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.
If on skin:	Wash with soap and water. If irritation occurs, seek medical attention
If in eyes:	Flush eyes with large amounts of water for 15 minutes. Get medical attention.
If swallowed:	If swallowed, call a physician immediately. Only induce vomiting at the instruction of a physician. Never give anything by mouth to an unconscious person.

Section 5 – Fire Fighting Measures

Flash point:	150°F (65°C)
LEL:	N/D
UEL:	N/D

Extinguishing Media
Foam, dry chemical, carbon dioxide or water fog.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus (SCBA) and other protective clothing. Hazardous decomposition products possible (see Section 10).

Unusual Fire And Explosion Hazards: Combustible – moderate flash point. Vapors heavier than air and may travel along the ground or to low spots at considerable distances to a source of ignition resulting in potential flashback. Burning liquid may float on water. Heat may build up pressure and rupture containers.

Section 6 – Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled: Remove all sources of ignition. Use absorbent materials to prevent footing hazard and to contain. Ventilate area with natural or explosion-proof, forced air ventilation. Avoid flushing into sewers, drains, waterways, and soil. Wear protective clothing and respiratory protection during cleanup.

Section 7 – Handling and Storage

Precautions To Be Taken In Handling And Storing: Keep container closed and upright when not in use. Do not store near heat, sparks, or open flames.

Other Precautions: Avoid prolonged or repeated contact with skin or clothing. Empty containers may contain residues; treat as if full and observe all products precautions. Do not reuse empty containers.

KEEP OUT OF REACH OF CHILDREN.

Section 8 – Exposure Controls/Personal Protection

Ingredient	Units
Diacetone Alcohol	
ACGIH TLV:	50 ppm
OSHA PEL:	50 ppm

Respiratory Protection (Specify Type): In confined poorly ventilated areas, use NIOSH/MSHA approved air purifying or supplied air purifying or supplied air respirators.

Ventilation – Local Exhaust: Acceptable

Special: Explosion-proof equipment.

Mechanical (General): Preferable

Other: N/A

Protective Gloves: Wear rubber gloves.

Eye Protection: Chemical splash goggles (ANSI Z-87.1 or equivalent)

Other Protective Clothing Or Equipment: Coveralls recommended.

Work/Hygienic Practices: Where use can result in skin contact, wash exposed areas thoroughly before eating, drinking, smoking, or leaving work area. Launder contaminated clothing before reuse.

Section 9 – Physical and Chemical Properties

Boiling point:	322°F (161°C) @ 760 mmHg
Specific gravity (H20 = 1):	1.38
Vapor pressure (mmHg):	0.3 @ 68°F (20°C)
Melting point:	N/A
Vapor Density (Air = 1):	1.1
Evaporation rate (Ethyl Acetate = 1):	0.14
Appearance/Odor:	Blue paste/Mild odor
Solubility in water:	23%
Volatile Organic Compounds (VOC) Content (theoretical percentage by weight):	23% or (317 g/L)

Section 10 – Stability and Reactivity

Stability: Stable

Conditions To Avoid: Heat, sparks, open flames, and strong oxidizing. Temperatures above 500°F (260°C).

Incompatibility (Materials To Avoid): Gaseous oxygen, strong oxidizing materials, molten alkali metals.

Hazardous Decomposition Products: CO, CO_2 and fragmented hydrocarbons.

Hazardous Polymerization: Will not occur.

Section 11 – Toxicology Information

Chronic Health Hazards

No ingredient in this product is an IARC, NTP or OSHA Lister carcinogen.

Toxicology Data

Ingredient Name

Diacetone Alcohol	
Oral-Rat LD50:	4000 mg/kg
Inhalation-Human TCLo:	100 ppm

Section 12 – Ecological Information

Ecological Data

Ingredient Name:	Diacetone Alcohol
Food Chain Concentration Potential	N/A
Waterfowl Toxicity	N/A
BOD	N/A
Aquatic Toxicity	N/A

Section 13 – Disposal Considerations

Waste Classification: Non-regulated solid waste

Disposal Method: Approved landfill

Waste from this product is not considered hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. Dispose of in accordance with Federal, State, and Local regulation regarding pollution.

Section 14 – Transportation Information

DOT:	Non-regulated
Ocean (IMDG):	Non-regulated
Air (IATA):	Non-regulated
WHMIS (Canada):	Non-regulated

Section 15 – Regulatory Information

Regulatory Data

Ingredient Name:	Diacetone Alcohol
SARA 313	N/A
TSCA Inventory	Yes
CERCLA RQ	N/A
RCRA Code	N/A

Section 16 – Other Information

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). The information herein is given in good faith, but no warranty, expressed or implied is made.

Consult RectorSeal for further information: (713) 263-8001

SAFETY DATA SHEET

1. Identification

Product identifier **Oatey Silver Lead Free and Safe-Flo® Solder**

Other means of identification

SDS number 1601E

Synonyms Part Numbers: 22027, 23000, 23001, 23002, 29030, 29024, 29025, 53061, 53180, 53062, 53188, 53064, 53195, 50683, 50684, 50691, 50962, 53013, 53186

Recommended use Joining Copper Pipes.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Oatey Co.

Address 4700 West 160th St.
Cleveland, OH 44135

Telephone 216-267-7100

E-mail info@oatey.com

Transport Emergency Chemtrec 1-800-424-9300 (Outside the US 1-703-527-3887)

Emergency First Aid 1-877-740-5015

Contact person MSDS Coordinator

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Very toxic to aquatic life.

Precautionary statement

Prevention Avoid release to the environment.

Response Collect spillage.

Storage Store away from incompatible materials.

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

Hazard(s) not otherwise classified (HNOC) Heating above the melting point releases metallic oxides which may cause metal fume fever by inhalation. The symptoms are shivering, fever, malaise and muscular pain.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Tin	7440-31-5	60-100
Bismuth	7440-69-9	1-5
Copper	7440-50-8	1-5
Silver	7440-22-4	1-5

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed Direct contact with eyes may cause temporary irritation.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically.

General information Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Dry sand. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

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 Use water spray to cool unopened containers.

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

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. 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 Stop the flow of material, if this is without risk. Collect spillage. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling Avoid prolonged exposure. Avoid breathing dust/fume/gas/mist/vapors/spray. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities Store in original tightly closed container. 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
Copper (CAS 7440-50-8)	PEL	1 mg/m3	Dust and mist.
		0.1 mg/m3	Fume.
Silver (CAS 7440-22-4)	PEL	0.01 mg/m3	
Tin (CAS 7440-31-5)	PEL	2 mg/m3	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Silver (CAS 7440-22-4)	TWA	0.1 mg/m3	Dust and fume.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
Silver (CAS 7440-22-4)	TWA	0.01 mg/m3	Dust.
Tin (CAS 7440-31-5)	TWA	2 mg/m3	

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

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear protective gloves.

Other Wear appropriate chemical resistant clothing.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance Solid wire.

Physical state Solid.

Form Solid.

Color Silver.

Odor Not available.

Odor threshold Not available.

pH Not available.

Melting point/freezing point 415 - 455 °F (212.78 - 235 °C)

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

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 9 - 11

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.

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	Contact with incompatible materials.
Incompatible materials	Acids. Chlorine.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	Not available.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	Very toxic to aquatic life.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
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. This material and its container must be disposed of as hazardous waste. 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

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

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

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Copper (CAS 7440-50-8)	LISTED
Silver (CAS 7440-22-4)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

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

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Copper	7440-50-8	1-5
Silver	7440-22-4	1-5

Other federal regulations

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

Not regulated.

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

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)
Tin (CAS 7440-31-5)

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

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)
Tin (CAS 7440-31-5)

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

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)
Tin (CAS 7440-31-5)

US. Rhode Island RTK

Copper (CAS 7440-50-8)
Silver (CAS 7440-22-4)

US. California Proposition 65

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

International Inventories

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

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

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

Issue date 30-July-2014

Revision date 10-November-2017

Version # 02

HMIS® ratings Health: 0
Flammability: 0
Physical hazard: 0

Disclaimer Oatey Co. 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.