



1380 Route 286
Suite 121
Indiana, PA 15701

ICP-1000

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **ICP-1000**
CHEMICAL DESCRIPTION: Aqueous blend of propylene glycol and dispersant
PRODUCT CLASS: Specialty
VERSION: 03-09-10

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Propylene glycol	57-55-6	20-50	None established	None established
Anionic copolymer	Proprietary	20-50	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Appearance: Clear colorless liquid.
WARNING: May cause eye and skin irritation. Ingestion may cause gastrointestinal irritation. Not an inhalation hazard unless respirable mists, aerosols or vapors are generated. If generated, mists, aerosols or vapors may cause respiratory tract irritation.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause irritation.

SKIN CONTACT: Repeated contact may cause irritation.

INGESTION: Ingestion may cause gastrointestinal irritation.

INHALATION: If product mists, aerosols or vapors are generated and inhaled, respiratory tract irritation may occur.

SUBCHRONIC, CHRONIC: No information is available for this product. Information on the product component, propylene glycol, follows.

Repeated or prolonged exposure of the skin to propylene glycol may cause defatting and drying of the skin. In rare cases, repeated excessive exposure to propylene glycol may cause central nervous system effects.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: In case of contact, flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure complete rinsing. If irritation occurs, get medical attention.

SKIN CONTACT: In case of skin contact, remove contaminated clothing and wash the affected areas thoroughly with plenty of soap and water. Wash contaminated clothing before reuse. If irritation occurs, get medical attention

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, give large quantities of water. Get medical attention. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: In case of ingestion, treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

INHALATION: If inhalation occurs, remove victim to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention if any breathing difficulties occur.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: Not available but expected to exceed 200 °F (93.3 °C)

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Alcohol foam, water fog, carbon dioxide, or dry chemical. Do not use a direct stream of water or frothing may occur.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product emits toxic gases under fire conditions. A flammable concentration of propylene glycol vapor can accumulate at temperatures above 215 °F (101.7 °C).

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, nitrogen, sulfur, and sodium as well as aldehydes, lactic acid, pyruvic acid, and acetic acid.

NFPA CODES:

Health = 0

Flammability = 1

Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Do not touch spilled material. Restrict access to area as appropriate until clean-up operations are complete. Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Ventilate the spill area. Stop or reduce any leaks if it is safe to do so.

METHODS FOR CLEAN-UP:

Small spills: Soak up spill with an inert absorbent material (e.g. vermiculite, dry sand, earth). Do not use combustible materials, such as saw dust. Place residues in a suitable, covered, properly labeled container. Wash the affected area.

Large spills: Contain liquid using an inert absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal).

SECTION 7: HANDLING AND STORAGE

HANDLING:

Avoid contact with eyes, skin, and clothing.

Avoid breathing mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Do not take internally.

Keep containers closed when not in use.

Ensure that containers are properly labeled.
Since empty containers may retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.
Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store product in a cool, dry, well-ventilated area away from incompatibles.
Avoid elevated temperatures.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

RESPIRATORY PROTECTION: If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection.

ENGINEERING CONTROLS: Use local ventilation exhaust or other engineering controls when mists, vapors or aerosols may be generated. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 3.5-5.0

SPECIFIC GRAVITY: 1.125-1.165 g/mL

SOLUBILITY IN WATER: Complete

BOILING POINT: Not available

FREEZING POINT: -14.8 °F (-26 °F)

VAPOR PRESSURE: Not available

VAPOR DENSITY: Not available

APPEARANCE AND ODOR: Clear, colorless liquid with mild or no odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid heat, flames, ignition sources, and incompatibles. Avoid temperatures above 250 °F (121 °C) since propylene glycol decomposes at temperatures exceeding that value.

INCOMPATIBILITIES: Strong oxidizing agents, strong bases, and strong acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, nitrogen, sulfur, and sodium as well as aldehydes, lactic acid, pyruvic acid, and acetic acid.

SECTION 11: TOXICOLOGICAL INFORMATION

Based on information below, propylene glycol is practically non-toxic by dermal or oral exposure.

The acute toxicity data listed below for the anionic copolymer is based on a similar product.

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Propylene glycol	>20,000 mg/Kg	>10,000 mg/Kg	Not available
Anionic copolymer, as product	>5,000 mg/Kg	>2,000 mg/Kg	Not available

SECTION 12: ECOLOGICAL INFORMATION

Based on ingredient information listed below, the product is expected to be non-toxic to aquatic species.

Test Material	Aquatic Toxicity Data
Propylene glycol	Acute LC50 (Daphnia magna): 4,850-34,400 mg/L Acute LC50 (Fathead minnow): 46,500-54,900 mg/L Acute LC50 (Guppy): >10,000 mg/L Acute LC50 (Rainbow trout): 44,000 mg/L
Anionic copolymer	48 hr LC50 (Daphnia magna): 2,800 mg/L 96 hr LC50 (Bluegill sunfish): >10,000 mg/L 96 hr LC50 (Rainbow trout): 4,900 mg/L

SECTION 13: DISPOSAL

RCRA STATUS: Unused or discarded product, as sold, is not considered a RCRA Hazardous Waste.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION: Not regulated in domestic ground transportation.
 Proper Shipping Name: Not applicable
 Primary Hazard Class/Division: Not applicable
 UN Number: Not applicable
 Packing Group: Not applicable
 Label: None

SECTION 15: REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This product is not considered to be hazardous as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):
Chemical Name CERCLA Reportable Quantity (RQ)
 No ingredients have a CERCLA RQ.

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

<u>Chemical Name</u>	<u>CAS#</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
no	no	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
None		

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 0 Flammability = 1 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, Superior Well Services makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.



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 One North Shore Center
 12 Federal Street
 Pittsburgh, PA 15212

KR-153SL

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
 CALL: 1-800-424-9300 CHEMTREC

FOR ADDITIONAL INFORMATION
 CALL: 412-321-9800

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **KR-153SL**
 CHEMICAL DESCRIPTION: Solution of 2,2-Dibromo-3-nitrilopropionamide
 PRODUCT CLASS: Biocide
 MSDS REVISION: 1-8-08

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
2,2-Dibromo-3-nitrilo-propionamide (DBNPA)	10222-01-2	20 minimum	None established	None established
Polyethylene glycol (PEG)	25322-68-3	50	None established	None established
Diethylene glycol	111-46-6	1.5-3.5	None established	None established
Ethylene glycol	107-21-1	<1	None established	Ceiling: 100 mg/m ³ (aerosol only)

Note: Diethylene glycol and ethylene glycol are introduced into this product as residuals in PEG.

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear, yellow liquid
WARNING!
 May cause severe irritation or burns to the eyes.
 May cause skin irritation or burns.
 May cause skin sensitization.
 Harmful if swallowed or if mists or vapors are inhaled.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, ingestion, and inhalation of vapors or mists.

TARGET ORGANS: Eye, skin, respiratory system, liver, kidney, and central nervous system

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing eye problems, skin disorders, or impaired liver, kidney, or respiratory function may be more susceptible to the effects of overexposure to this substance.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: This product may cause severe eye irritation or burns.

SKIN CONTACT: This product may cause skin irritation or burns. Symptoms may include redness and burning of the skin. Skin sensitization may occur. Ethylene glycol, a residual in this product, can be absorbed through skin. However, toxic effects by skin absorption would not be expected unless the exposure was extremely severe, since the concentration of ethylene glycol in this product is only about 1%.

INGESTION: This product would be expected to be toxic by ingestion due to the toxic nature of the following components: DBNPA, diethylene glycol, and ethylene glycol. (The component, polyethylene glycol, can cause gastric disturbances, but would not be considered toxic.)

INHALATION: This product may cause respiratory tract irritation or damage if vapors or mists are inhaled.

SUBCHRONIC, CHRONIC: Skin sensitization may occur with chronic exposure to this product. Chronic exposure to dipropylene glycol can cause kidney and liver damage. Chronic exposure to ethylene glycol by any route can cause severe kidney problems and brain damage. Exposure to ethylene glycol can cause damage to a developing fetus.

CARCINOGENICITY:

NTP: No ingredients listed in this section.

IARC: No ingredients listed in this section.

OSHA: No ingredients listed in this section.

SECTION 4: FIRST AID MEASURES

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 20 minutes, occasionally lifting the upper and lower eyelids to insure complete rinsing. If contact lenses are present, remove them after 5 minutes of rinsing, then continue rinsing. Seek medical aid immediately.

SKIN CONTACT: Remove contaminated clothing and shoes. Wash skin with mild soap and plenty of water for at least 15 minutes. Seek medical attention immediately. Wash clothing and shoes before reuse.

INGESTION: If this product is swallowed, call a poison control center or doctor immediately for treatment advice. If the victim is conscious and alert, have him sip a glass of water, if he is able to swallow. Never give anything by mouth to an unconscious person. Do not induce vomiting unless told to do so by the poison control center or doctor.

INHALATION: In case of mist inhalation or of breathing fumes released from heated material, remove the victim to fresh air. Keep the victim quiet and warm. If he is not breathing, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Seek medical aid immediately.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT: Not available

LOWER FLAMMABLE LIMIT: Not available

UPPER FLAMMABLE LIMIT: Not available

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Use dry powder, carbon dioxide or water spray.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: When heated to decomposition, this product may release poisonous and corrosive fumes.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon dioxide, carbon monoxide, bromine gas, hydrogen bromide, cyanogen bromide, and oxides of nitrogen.

NFPA RATINGS: Health = 1 Flammability = 1 Reactivity = 0 Special Hazard = None

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IF THIS MATERIAL IS RELEASED OR SPILLED:**

1. Wear a self-contained breathing apparatus in the positive pressure mode and protective clothing.
2. Avoid releasing the spilled material to streams, lakes, or ponds.
3. Absorb the liquid on sand or vermiculite and place the used absorbent in a closed container for disposal.
4. Decontaminate the spill area with a 10% sodium bicarbonate solution.
5. Absorb the used bicarbonate solution with sand or vermiculite.
6. Sweep up the used absorbent, place it in a suitable container, and hold for waste disposal.
7. Ventilate the area and wash the spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE**HANDLING:**

Do not get in eyes, on skin, or clothing.

Avoid breathing vapor.

Use with adequate ventilation.

Wash thoroughly after handling.

Remove contaminated clothing and wash before reuse.

Discard contaminated leather articles such as shoes and belt.

Do not eat, drink, or smoke when handling this product.

Keep containers closed when not in use.

STORAGE:

Store in a cool, dry, well-ventilated and shaded area, away from heat sources and incompatible materials. To maintain product quality, store product at temperatures below 104 °F (40 °C).

SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles or a face shield with safety glasses

SKIN PROTECTION: Chemical resistant rubber gloves and body covering clothes and boots to prevent skin contact

RESPIRATORY PROTECTION: If airborne concentrations exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: A system of local exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the latest edition of the ACGIH document *Industrial Ventilation, A Manual of Recommended Practices* for details.

WORK PRACTICES: Eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 2.0-6.5 @ 25 °C

SPECIFIC GRAVITY: 1.234-1.300 g/mL @ 20 °C

SOLUBILITY IN WATER: Complete

BOILING POINT: >158 °F (>70 °C) decomposes

FREEZING POINT: < -7.6 °F (< -22 °C)

VAPOR PRESSURE: 4×10^{-5} mm Hg

VAPOR DENSITY (air=1): <1

APPEARANCE AND ODOR: Clear, yellow liquid with a sharp odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: Heating above 158 °F (70 °C), the decomposition temperature and exposure to light

INCOMPATIBILITY: Oxidizing agents, reducing agents, and bases

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon dioxide, carbon monoxide, bromine gas, hydrogen bromide, cyanogen bromide, and oxides of nitrogen.

SECTION 11: TOXICOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
2,2-Dibromo-3-nitrilo-propionamide (DBNPA)	308 mg/Kg	Not available	0.32 mg/L/4 H
Diethylene glycol	12,565 mg/Kg	11,890 mg/Kg	Not available
Ethylene glycol	4,700 mg/Kg	9,530 uL/Kg	12,111 mg/L

Active ingredient: 2,2-Dibromo-3-nitrilo-propionamide (DBNPA):

Eye Irritation (rabbit): Corrosive

Dermal Irritation (rabbit): Moderate irritant

Dermal Sensitization (guinea pig): Weak sensitizer

Sub-chronic Toxicity: NOEL: 5 mg/Kg/day (13 weeks, oral, rat)

Mutagenicity: Not mutagenic by the Ames Test

Reproductive effects were observed in experimental studies with rats and mice exposed to diethylene glycol and ethylene glycol.

SECTION 12: ECOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Aquatic Toxicity Data
2,2-Dibromo-3-nitrilo-propionamide (DBNPA)	48 hr EC50 (Daphnia magna): 0.86 mg/L 96 hr LC50 (Sheepshead minnow): 3.4 mg/L 96 hr LC50 (Bluegill sunfish): 2.3 mg/L 96 hr LC50 (Rainbow trout): 2.3 mg/L 96 hr LC50 (Mysid shrimp): 0.72 mg/L 96 hr LC50 (Easter oyster): 0.37 mg/L
Diethylene glycol	Not available
Ethylene glycol	48 hr LC50 (Daphnia magna): 51,000 mg/L 96 hr LC50 (Fathead minnow): 49,000 mg/L 24 hr LC50 (Goldfish): >5,000 mg/L 96 hr LC50 (Bluegill): 27,540 mg/L 96 hr LC50 (Rainbow trout): 41,000 mg/L

Test Material	Avian Toxicity Data
2,2-Dibromo-3-nitrilo-propionamide (DBNPA)	Acute Oral LD50 (Bobwhite quail): 354 mg/Kg Dietary LC50 (Mallard duck): >5,620 ppm Dietary LC50 (Bobwhite quail): >5,620 ppm

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORT INFORMATION

DOT CLASSIFICATION:

Proper Shipping Name: Not regulated for non-bulk shipments.

For bulk shipments: Environmentally hazardous substance,
liquid, n.o.s. (contains 2,2-dibromo-3-nitrilopropionamide)

Class/Division: 9

ID Number: UN 3082

Packing Group: III

Label: Environmentally hazardous substance

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

<u>Chemical Name</u>	<u>CERCLA Reportable Quantity (RQ)</u>
Ethylene Glycol	5,000 lb
Product	500,000 lb

(Notify the EPA of spills exceeding this amount.)

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

<u>Chemical Name</u>	<u>CAS #</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
yes	yes	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
Ethylene glycol (glycol ether category)	107-21-1	1
Diethylene glycol (glycol ether category)	111-46-6	2-4

Registration:

EPA Registration Number: 8622-20-66126

EPA Est. Number: 12487-OH-1

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 1 Flammability = 1 Reactivity = 0

Hazard rating scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, Kroff Chemical Company, Inc. makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.



1380 Route 286
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Indiana, PA 15701

Super TSC

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **Super TSC**

CHEMICAL DESCRIPTION: Aqueous blend of propylene glycol, phosphonate,
and anionic polymers

PRODUCT CLASS: Specialty

VERSION: 3-10-10

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Propylene glycol	57-55-6	20-40	None established	None established
2-Phosphonobutane-1,2,4-tricarboxylic acid, potassium salt	93858-78-7	1-15	None established	None established
Anionic copolymer	Proprietary	1-15	None established	None established
Anionic polymer	Proprietary	1-15	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear colorless liquid.

WARNING!

May cause eye and skin irritation.

Ingestion may cause gastrointestinal irritation.

Not an inhalation hazard unless respirable mists, aerosols, or vapors are generated.

If generated, mists, aerosols, or vapors may cause respiratory tract irritation.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, ingestion, and inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Conditions of the eye, skin, and respiratory system may be aggravated by overexposure to this product.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause eye irritation with tearing, redness, and swelling.

SKIN CONTACT: Contact may cause skin irritation with redness.

INGESTION: Ingestion may cause gastrointestinal irritation. Ingestion of a sizable amount may cause gastrointestinal upset and temporary central nervous system depression.

INHALATION: If product mists, aerosols, or vapors are generated and inhaled, respiratory tract irritation may occur. Dizziness, headache, nausea, and flu-like symptoms may also occur. Persons with sensitive airways (e.g. asthmatics) may react to inhaled mists.

SUBCHRONIC, CHRONIC: No information is available for this product. Information on product component(s) follows.

Repeated or prolonged exposure of the skin to propylene glycol may cause defatting and drying of the skin. Propylene glycol does not pose a chronic inhalation hazard unless mists, aerosols, or vapors are generated and inhaled over a prolonged period of time or are repeatedly inhaled. If so, central nervous system depression may occur.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally to ensure complete rinsing. Get medical attention immediately.

SKIN CONTACT: In a timely manner remove contaminated clothing and wash the affected area thoroughly with plenty of soap and water. If irritation occurs, get medical attention. Wash contaminated clothing before reuse.

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, give large quantities of water. Get medical attention. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: In case of ingestion, treat symptomatically. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

INHALATION: If inhalation occurs, remove victim to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Get medical attention if any breathing difficulties occur.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: Not available but expected to exceed 200 °F (93.3 °C)

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Alcohol foam, water fog, carbon dioxide, or dry chemical. Do not use a direct stream of water or frothing may occur.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product emits toxic gases under fire conditions. A flammable concentration of propylene glycol vapor can accumulate at temperatures above 215 °F (101.7 °C).

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, potassium, phosphorus, nitrogen, sulfur, and sodium as well as acrylate monomers, hydrocarbons, aldehydes, lactic acid, pyruvic acid, and acetic acid.

NFPA CODES:

Health = 1

Flammability = 1

Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Use personal protective equipment recommended in Section 8 (Exposure Controls/Personal Protection). Restrict access to area as appropriate until clean-up operations are complete. Do not touch spilled material. Ventilate the spill area. Stop or reduce any leaks if it is safe to do so.

METHODS FOR CLEAN-UP:

Small spills: Soak up spill with an inert material (e.g. vermiculite, dry sand, earth). Place residues in a suitable, covered, properly labeled container. Wash the affected area.

Large spills: Contain liquid using an inert absorbent material, by digging trenches or by diking. Reclaim into recovery or salvage drums or tank truck for proper disposal. Contact an approved waste hauler for disposal of contaminated recovered material. Dispose of material in compliance with regulations indicated in Section 13 (Disposal).

SECTION 7: HANDLING AND STORAGE**HANDLING:**

Avoid contact with eyes, skin, and clothing.

Avoid breathing mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Do not take internally.

Keep containers closed when not in use.

Ensure that containers are properly labeled.

Since empty containers retain product residues (vapors, liquid), observe all warnings and precautions listed for the product.

Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store product in a cool, dry, well-ventilated area away from incompatibles.

Avoid elevated temperatures.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and clean body covering clothing

RESPIRATORY PROTECTION: If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection.

ENGINEERING CONTROLS: A system of local and/or general exhaust is recommended to keep employee exposures below irritating levels. Local exhaust ventilation is preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the latest edition of the ACGIH document *Industrial Ventilation, A Manual of Recommended Practices* for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 6.0-7.5

SPECIFIC GRAVITY: 1.12-1.18 g/mL

SOLUBILITY IN WATER: Complete

BOILING POINT: Not available

FREEZING POINT: <5 °F (<-15 °C)

VAPOR PRESSURE: Not available

VAPOR DENSITY: Not available

APPEARANCE AND ODOR: Clear, colorless liquid with a mild odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid temperatures above 250 °F (121 °C) since propylene glycol decomposes at temperatures exceeding that value.

INCOMPATIBILITIES: Strong oxidizing agents, strong bases, and strong acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of carbon, potassium, phosphorus, nitrogen, sulfur, and sodium as well as acrylate monomers, hydrocarbons, aldehydes, lactic acid, pyruvic acid, and acetic acid.

SECTION 11: TOXICOLOGICAL INFORMATION

Based on information below, the product is expected to be practically non-toxic by dermal, inhalation or oral exposure.

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Propylene glycol	>20,000 mg/Kg	>10,000 mg/Kg	Not available

2-Phosphonobutane-1,2,4-tricarboxylic acid (PBTC)*	>6,500 mg/Kg	>4,000 mg/Kg	>3,000 mg/m ³ /4H**
Anionic copolymer, 28% solution	>5,000 mg/Kg	>2,000 mg/Kg	Not available
Anionic polymer, sodium salt	>1,450 mg/Kg	>5,800 mg/Kg	Not available

*Test material is based on 2-PBTC as acid, however the potassium salt of 2-PBTC is contained in the product.

**Neutralized form tested with results recalculated for 50% acid form

SECTION 12: ECOLOGICAL INFORMATION

Based on information below, the product is expected to be non-toxic to aquatic species.

Test Material	Aquatic Toxicity Data
Propylene glycol	Acute LC50 (Daphnia magna): 4,850-34,400 mg/L Acute LC50 (Fathead minnow): 46,500-54,900 mg/L Acute LC50 (Guppy): >10,000 mg/L Acute LC50 (Rainbow trout): 44,000 mg/L
2-Phosphonobutane-1,2,4-tricarboxylic acid (PBTC)*	48 hr EC50 (Daphnia magna): >300 mg/L** 48 hr LCo (Rainbow trout): 5,300 mg/L 96 hr LC50 (Rainbow trout): >1,000 mg/L**
Anionic copolymer	48 hr LC50 (Daphnia magna): 2,800 mg/L 96 hr LC50 (Bluegill sunfish): >10,000 mg/L 96 hr LC50 (Rainbow trout): 4,900 mg/L
Anionic polymer, as acid solution***	48 hr EC50 (Daphnia): 1,509 mg/L 96 hr LC50 (Rainbow trout): 1,182 mg/L

* Test material is based on 2-PBTC as acid, however the potassium salt of 2-PBTC is contained in the product.

**Neutralized form tested with results recalculated for 50% acid form

***Testing performed at near neutral pH

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product, as sold, would not be considered a RCRA Hazardous Waste.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION: Not regulated by DOT in domestic ground transportation.

UN Number: Not applicable

Proper Shipping Name: Not applicable

Primary Hazard Class/Division: Not restricted

Packing Group: Not applicable

Label: None

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status:

This product is not considered to be hazardous as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

<u>Chemical Name</u>	<u>CERCLA Reportable Quantity (RQ)</u>
No ingredients have a CERCLA RQ.	

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

<u>Chemical Name</u>	<u>CAS#</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
no	no	no	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
None		

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 1 Flammability = 1 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, Superior Well Services makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.



1380 Route 286
Suite 121
Indiana, PA 15701

WFR-3B

MATERIAL SAFETY DATA SHEET

FOR EMERGENCY ASSISTANCE
CALL: INFOTRAC at 1-800-535-5053

FOR ADDITIONAL INFORMATION
CALL: 724-248-1001

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **WFR-3B**
CHEMICAL DESCRIPTION: Proprietary Blend
PRODUCT CLASS: Specialty
MSDS REVISION: 3-10-10

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Hydrotreated paraffinic solvent	64742-47-8	20-50	TWA: 500 ppm	TWA: 100 ppm
Ethoxylated alcohol blend	Proprietary	1-15	None established	None established
Propylene glycol	57-55-6	1-15	None established	None established
Ethoxylated oleylamine	26635-93-8	1-5	None established	None established

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Pale, off-white, viscous liquid with a hydrocarbon odor.
Danger!
May cause irritation to eyes and skin.
Harmful if ingested or inhaled.
Slippery when wet, therefore avoid contact with water.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, absorption, ingestion, and inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with pre-existing eye problems, skin disorders, respiratory problems, or impaired liver or kidney function may be more susceptible to the effects of this product.

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: Contact may cause eye irritation with tearing, redness, and swelling.

SKIN CONTACT: Contact may cause skin irritation, especially if the contact is prolonged or repeated. Symptoms may include soreness, inflammation, a burning sensation, dryness, cracking, and possibly, dermatitis. Hydrotreated paraffinic solvents can be absorbed through the skin causing the effects listed under inhalation if the area of exposure is large.

INGESTION: Ingestion of the product component, hydrotreated paraffinic solvents, may be harmful or fatal, causing irritation of the gastrointestinal tract and central nervous effects. Symptoms may include a burning sensation of the mouth and esophagus, nausea, headache, vomiting, dizziness, staggering gait, drowsiness, loss of consciousness, delirium, and other central nervous effects.

Ingestion of large quantities of the product component, propylene glycol, may cause gastrointestinal upset and temporary central nervous system depression. The effects appear more severe in individuals with kidney problems.

INHALATION: Inhalation of the vapors of hydrotreated paraffinic solvents may cause central nervous system depression with symptoms that include dizziness and euphoria leading to unconsciousness in severe cases. Vapors may irritate the respiratory tract. Symptoms may include coughing, difficult breathing, and chest pain.

SUBCHRONIC, CHRONIC: Chronic exposure to Hydrotreated paraffinic solvents may lead to central nervous system complications, and dermatitis. Animal studies have indicated the potential for liver and kidney damage.

Repeated or prolonged exposure of the skin to propylene glycol may cause defatting and drying of the skin. Propylene glycol does not pose a chronic inhalation hazard unless mists, aerosols, or vapors are generated and inhaled over a prolonged period of time or are repeatedly inhaled. If so, central nervous system depression may occur.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eye lids occasionally. Seek medical attention immediately.

SKIN CONTACT: Immediately wash skin with plenty of soap and water for at least 15 minutes. Remove contaminated clothing and shoes. Seek medical attention if irritation occurs. Wash clothing before reuse. Thoroughly clean shoes before reuse.

INGESTION: This product may present an aspiration hazard. If swallowed, vomiting may occur spontaneously, but **DO NOT INDUCE VOMITING**. If vomiting occurs, keep head below hips to prevent aspiration into the lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

INHALATION: If inhaled, remove victim to fresh air. If victim is not breathing, give artificial respiration. If breathing is difficult, have a trained medical person give oxygen. Seek medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: >145 °F (>63 °C), ASTM D93

FLAMMABLE LIMITS IN AIR (% by VOLUME): Not available

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Use water fog or fine spray, carbon dioxide, dry chemical, or foam. Do not use a direct water stream. It will spread the fire.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Spills of this product produce extremely slippery surfaces. Spills of organic liquids on hot fibrous insulations may lead to lowering of the auto ignition temperatures possibly resulting in spontaneous combustion. Containers may explode when involved in a fire. Toxic gases and vapors may be released in a fire.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce ammonia, carbon dioxide, carbon monoxide, and nitrogen oxides. Hydrocarbons, aldehydes and lactic, pyruvic, and acetic acids may also be formed.

NFPA CODES:

Health = 2

Flammability = 1

Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment as specified in Section 8. Ventilate the area of the leak or spill. Isolate the hazard area. Keep unnecessary and unprotected personnel from entering the area. Do not flush with water. Contain and recover the liquid when possible. Collect the liquid in an appropriate container. Then absorb the residue with an inert material (e.g. vermiculite, dry sand, earth), and place the used absorbent in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to the sewer! After cleaning, flush away traces with water.

CAUTION: Spills of this product result in extremely slippery surfaces causing a slip and fall hazard.

SECTION 7: HANDLING AND STORAGE**HANDLING:**

Avoid contact with eyes, skin, and clothing.

Avoid breathing vapor or mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Do not take internally.

Keep containers closed when not in use.

Ensure that containers are properly labeled.

Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store in a cool, dry, well-ventilated area away from incompatible materials and sources of ignition.

Avoid elevated temperatures.

Do not allow to freeze. This may impair product performance or impair product integrity.

Containers should be bonded and grounded for transfers to avoid static sparks.

Protect against the physical damage of containers.

Observe all warnings and precautions listed for this product.

Do not attempt to clean empty containers since the residue is difficult to remove.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles and/or a full face shield where splashing is possible

SKIN PROTECTION: Chemical resistant gloves and impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

RESPIRATORY PROTECTION: If airborne concentrations exceed published exposure limits, use a NIOSH approved respirator in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Use local and/or general exhaust ventilation to maintain airborne concentrations below exposure limits. Local exhaust is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, the most recent edition, for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 5.0-8.0

SPECIFIC GRAVITY: 1.00 -1.06 g/mL

SOLUBILITY IN WATER: Water dispersible

BOILING POINT: Not available

MELTING POINT/FREEZING POINT: < -26°C (< -15°F)

VAPOR PRESSURE: Not available

VAPOR DENSITY (air=1): Not available

APPEARANCE AND ODOR: Viscous, pale off-white liquid with a hydrocarbon odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under ordinary conditions of use and storage.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Avoid heat, flames, ignition sources, and incompatibles.

INCOMPATIBILITIES: Strong oxidizing agents and strong acids. Oxidizers may cause exothermic reactions.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce carbon dioxide, carbon monoxide, and nitrogen oxides. Hydrocarbons, aldehydes and lactic, pyruvic, and acetic acids may also be formed.

SECTION 11: TOXOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Hydrotreated paraffinic solvent	>50,000 mg/Kg	31,600 mg/Kg	>21,400 mg/m ³ /4H
Ethoxylated alcohol blend, similar materials	1,600-2,500 mg/Kg	>2,000 mg/Kg	Not available
Propylene glycol	>20,000 mg/Kg	>10,000 mg/Kg	Not available
Ethoxylated oleylamine	1,500 mg/Kg	Not available	Not available

SECTION 12: ECOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Aquatic Toxicity Data
Anionic polymer, similar material	48 hr EC50 (Water flea, Daphnia magna): >100 mg/L 96 hr LC50 (Zebra fish, Brachydanio rerio): >100 mg/L 72 hr IC50 (Green Algae, Selenastrum Capricornutum): >100 mg/L All studies performed in environmentally representative water.
Hydrotreated paraffinic solvent	96 hr LC50 (Rainbow trout): >1,000 mg/L, water accommodated fraction
Ethoxylated alcohols, similar materials	LC50 (Fish): 0.5-5 mg/L
Propylene glycol	Acute LC50 (Daphnia magna): 4,850-34,400 mg/L Acute LC50 (Fathead minnow): 46,500-54,900 mg/L Acute LC50 (Guppy): >10,000 mg/L Acute LC50 (Rainbow trout): 44,000 mg/L
Ethoxylated oleylamine	Not available

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product, as sold, would not be considered a RCRA Hazardous.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION: Not regulated

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: hazardous substance, non-dangerous goods

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

<u>Chemical Name</u>	<u>CERCLA Reportable Quantity (RQ)</u>
None	

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

<u>Chemical Name</u>	<u>CAS#</u>	<u>RQ</u>	<u>TPQ</u>
None			

Section 311 and 312 Health and Physical Hazards:

<u>Immediate</u>	<u>Delayed</u>	<u>Fire</u>	<u>Pressure</u>	<u>Reactivity</u>
yes	no	yes	no	no

Section 313 Toxic Chemicals (40 CFR 372):

<u>Chemical Name</u>	<u>CAS Number</u>	<u>Percent by Weight</u>
None		

SECTION 16: OTHER INFORMATION

HMIS RATINGS: Health = 1 Flammability = 1 Reactivity = 0

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

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