

GHS COMPLIANT SAFETY DATA SHEET

 TO COMPLY WITH OSHA HAZARD COMMUNICATION STANDARD 29 CFR.1910.1200
 & THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS



SECTION 1: IDENTIFICATION

PRODUCT NAME	Resiflow® 2N
MFR.'S CODE ID/SYNONYMS	Resiflow® 2N
CAS NUMBER	Mixture (see Sections 3 or 8)
PRODUCT USE	Flow Control Agent for Waterborne Coatings
RESTRICTIONS ON USE	For industrial use only.
MANUFACTURER/SUPPLIER	Estron Chemical, Inc.
ADDRESS	807 North Main Street, Calvert City, KY 42029 USA
GENERAL INFORMATION	(270) 395-4195
EMERGENCY TELEPHONE	CHEMTREC (800) 424-9300

SECTION 2: HAZARDS IDENTIFICATION
Signal Word: *Danger*
GHS Classification

Physical	Health	Environmental
Flammable Liquids – Category 2	Acute Toxicity (Oral, Dermal, Inhalation) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Irritation – Category 2A Specific Target Organ Toxicity, Single Exposure (Respiratory Irritation, Central Nervous System) – Category 3	None

GHS Label

 Symbols: Flame	 Exclamation Mark
Hazard Statements H225: Highly flammable liquid and vapour H302: Harmful if swallowed H312: Harmful in contact with skin H315: Causes skin irritation H319: Causes serious eye irritation H332: Harmful if inhaled H335: May cause respiratory irritation H336: May cause drowsiness or dizziness	Precautionary Statements <i>Prevention</i> P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical/ventilating/light/equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P261: Avoid breathing dust/fume/gas/mist/vapours/spray. P264: Wash exposed skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product. P271: Use only outdoors or in a well-ventilated area. P280: Wear protective gloves/protective clothing/eye protection/face protection. <i>Response</i> P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P302+352: IF ON SKIN: Wash with plenty of soap and water. P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all

	<p>contaminated clothing. Rinse skin with water/shower. P304+340: IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. P312: Call a POISON CENTER or doctor/physician if you feel unwell. P321: Specific treatment (see supplemental first aid instructions on this label) P330: Rinse mouth. P332+313: If skin irritation occurs: Get medical advice/attention. P337+313: If eye irritation persists get medical advice/attention. P362+P364: Take off immediately all contaminated clothing and wash it before reuse. P370+378: In case of fire: Use foam, dry chemical powder, carbon dioxide or water fog to extinguish.</p> <p><i>Storage</i> P403+233+235: Store in a well ventilated place. Keep container tightly closed. Keep cool. P405: Store locked up.</p> <p><i>Disposal</i> P501: Dispose of contents/container to an authorized hazardous waste handler.</p>
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HAZARDS NOT OTHERWISE CLASSIFIED: None identified.

SECTION 3: COMPOSITION/ INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	CAS #	%	CLASSIFICATION	H Codes
2-Butoxyethanol	111-76-2	44.0 – 46.0	Flammable Liquids – Category 4 Acute Toxicity (Oral, Dermal, Inhalation) – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Irritation – Category 2A Specific Target Organ Toxicity, Single Exposure (Respiratory Irritation) – Category 3	H227 H302, H312, H332 H315 H319 H335
2-Propanol	67-63-0	4.0 – 6.0	Flammable Liquids – Category 2 Serious Eye Damage/Irritation – Category 2A Specific Target Organ Toxicity, Single Exposure (Central Nervous System) – Category 3	H225 H319 H336

(See Section 8 for Exposure Limits)

NON-HAZARDOUS INGREDIENTS	CAS #	%
Acrylic Polymer	Proprietary	49.0 – 51.0

SECTION 4: FIRST-AID MEASURES

SYMPTOMS OF EXPOSURE

ACUTE	Skin or serious eye irritation. Respiratory irritation. Drowsiness or dizziness. Nausea.
DELAYED	Stinging, tearing, redness and swelling of the eyes. Redness or burning of the skin. Headache. Nausea. Unconsciousness.

INHALATION Harmful if inhaled, may cause respiratory irritation, and may cause drowsiness or dizziness. If inhaled, remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If breathing is labored or with coughing, give 100% supplemental oxygen. If not breathing begin artificial respiration and get medical aid.

SKIN CONTACT Harmful in contact with skin and causes skin irritation. If on skin, wash with plenty of soap and water. Call a poison center or physician if you feel unwell. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

EYE CONTACT Causes serious eye irritation. If in eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing. If eye irritation persists get medical advice/attention.

INGESTION Harmful if swallowed. If swallowed, call a poison center or physician if you feel unwell. Rinse mouth.

SPECIFIC TREATMENT No other specific treatments are known or have been identified.

SECTION 5: FIRE FIGHTING MEASURES

FLAMMABILITY CLASSIFICATION Flammable Liquid Class IB

FLAMMABLE LIMITS LEL: 1.2 %, by volume of solvent.
UEL: 10.8 %, by volume of solvent.

HAZARDOUS COMBUSTION PRODUCTS Carbon Dioxide, Carbon Monoxide.

EXTINGUISHING MEDIA Dry Chemical, Foam, CO₂, Water Fog

UNUSUAL FIRE AND EXPLOSION HAZARDS Solvent vapors may travel in the work place. Since even residual amounts can ignite explosively, ensure all ignition sources are removed from the area. Solid stream of water may spread fire.

SPECIAL FIRE FIGHTING PROCEDURES Wear self-contained breathing apparatus and protective suit when fighting fire. Solid streams of water may spread the fire.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full (Bunker) protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS Prevent contact with skin, eyes and clothing. Ensure adequate ventilation.

PROTECTIVE EQUIPMENT See Personal Protective Equipment in Section 8.

EMERGENCY PROCEDURES Avoid unnecessary exposure to bystanders, prevent contact with open flames or high heat sources. Isolate the area and eliminate all ignition sources. Ground and bond all containers and handling equipment. Pump with explosion-proof equipment.

ENVIRONMENTAL PRECAUTIONS Obey relevant local, state, provincial and federal laws and regulations. Do not allow the product to enter public drainage systems or open water courses.

METHODS AND MATERIALS FOR CLEANING UP Absorb the product onto vermiculite, floor absorbent or other absorbent materials, such as dry-lime, sand, or soda ash. Sweep or scoop into a suitable container for disposal. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING Prevent contact with the eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing vapors. Use with adequate ventilation. Ground and bond all containers and handling equipment. Handle in accordance with good industrial hygiene and safety practice. Take precautionary measures against static discharges. Emptied containers may still be hazardous. Do not cut, drill, grind, weld or perform similar actions on or near empty containers.

CONDITIONS FOR SAFE STORAGE Keep container tightly closed and store in a dry, well ventilated area away from extreme heat, open flame or sources of ignition. Store locked up.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENTS	CAS #	%	ACGIH TLV	OSHA PEL
Acrylic Polymer	Proprietary	49.0 – 51.0	<i>None established</i>	<i>None established</i>
2-Butoxyethanol	111-76-2	44.0 – 46.0	20 ppm	50 ppm
2-Propanol	67-63-0	4.0 – 6.0	200 ppm	400 ppm

APPROPRIATE ENGINEERING CONTROLS Showers, eyewash stations and explosion-proof ventilation systems.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE Chemical splash goggles or face shield.

SKIN Wear resistant gloves (consult you safety equipment supplier) and impervious protective clothing as appropriate to prevent skin contact.

RESPIRATORY	An appropriate NIOSH approved respirator where exposure limits are exceeded.
HYGIENE MEASURES	Handle in accordance with good industrial hygiene and safety practices. When using, do not eat, drink or smoke. Wash face and hands before breaks and at the end of work. Wash contaminated clothing before re-use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE	Clear liquid	ODOR	Mild, sweet, esteric, ethereal
ODOR THRESHOLD	0.48 ppm	pH	No test data available
MELTING POINT	No test data available	BOILING POINT/RANGE	82 °C (180 °F)
FLASH POINT	53.6 °F (12 °C), Closed Cup	EVAPORATION RATE	3.0 (n-Butyl Acetate)
FLAMMABILITY	Flammable Liquid Class IB		
FLAMMABLE LIMITS	LOWER 1.2 %, <i>by volume of solvent</i>	UPPER	10.8 %, <i>by volume of solvent</i>
VAPOR PRESSURE	5.13 hPa @ 20 °C	VAPOR DENSITY	4.1 (Air = 1)
RELATIVE DENSITY	0.98 – 1.01	SOLUBILITY IN H ₂ O	<i>Solvent</i> – Soluble <i>Polymers</i> - Nil
PARTITION COEFFICIENT (n-octanol/water)	<i>Solvent</i> – log P _{ow} : 0.05 @ 20 °C	AUTOIGNITION TEMPERATURE	230 - 245 °C 1, 13 hPa
DECOMPOSITION TEMPERATURE	> 250 °C (<i>Polymer</i>)	VISCOSITY	80 - 200 cps
% VOLATILE	49 – 51 %	SOFTENING POINT	No test data available

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY	This product does not pose a significant reactivity hazard when stored appropriately (see Section 7).
STABILITY	This product is stable when stored appropriately (see Section 7).
CONDITIONS TO AVOID	All ignition sources, heat and open flames.
INCOMPATIBLE PRODUCTS	Strong oxidizers, aldehydes.
HAZARDOUS DECOMPOSITION PRODUCTS	Carbon Dioxide, Carbon Monoxide.
POSSIBILITY OF HAZARDOUS REACTIONS	Solvent component may form peroxides in the presence of air.

SECTION 11: TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE			
ACUTE	Skin or serious eye irritation. Respiratory irritation. Drowsiness or dizziness. Nausea.		
DELAYED	Stinging, tearing, redness and swelling of the eyes. Redness or burning of the skin. Headache. Nausea. Unconsciousness.		
ACUTE TOXICITY			
INHALATION	Harmful if inhaled, may cause respiratory irritation, and may cause drowsiness or dizziness.		
SKIN	Harmful in contact with skin and causes skin irritation.		
EYES	Causes serious eye irritation.		
INGESTION	Harmful if swallowed.		
INHALATION TOXICITY	LC ₅₀ Rat, 4 hours	2-Butoxyethanol	550 ppm
		2-Propanol	16,000 ppm
		Polymers	Not established
DERMAL TOXICITY	LD ₅₀ Rat	2-Butoxyethanol	1,250 mg/kg
		2-Propanol	12,800 mg/kg
		Polymers	Not established
SKIN IRRITATION	Draize, Rabbit, 24 hours	2-Butoxyethanol	Irritating to the skin

EYE IRRITATION	Draize, Rabbit, 24 hours	2-Butoxyethanol	Irritating to the eyes
ORAL TOXICITY	LD ₅₀ Rat	2-Butoxyethanol 2-Propanol Polymers	745 mg/kg 5,045 mg/kg Not established
SENSITIZATION	Draize, Guinea pig		Did not cause sensitization
CHRONIC EFFECTS CARCINOGENICITY			Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65. Not classified. Long-term exposure via inhalation of 2-Butoxyethanol at concentrations up to 125 ppm caused an increase in the incidence of liver tumors in male mice and forestomach tumors in female mice. A slight increase in adrenal tumors was observed in female rats. The NTP has determined that 2-Butoxyethanol displays some evidence of carcinogenicity in mice and equivocal evidence of carcinogenicity in female rats.
MUTAGENIC EFFECTS			None known
REPRODUCTIVE TOXICITY			None known
TARGET ORGAN EFFECTS			Central nervous system

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY	Not harmful to aquatic life.		
TOXICITY TO FISH	LC ₅₀ Oncorhynchus mykiss, 96 h LC ₅₀ Pimephales promelas, 96 h	2-Butoxyethanol 2-Propanol Polymers	1,474 mg/l 9,640 mg/l Not established
TOXICITY TO DAPHNIA	EC ₅₀ Daphnia magna, 48 h	2-Butoxyethanol 2-Propanol Polymers	1,800 mg/l > 10,000 mg/l Not established
TOXICITY TO ALGAE	EC ₅₀ Pseudokirchneriella subcapitata, 72 h EC ₅₀ Desmodesmus subsp., 72 h	2-Butoxyethanol Polymers 2-Propanol	911 mg/l Not established > 2,000 mg/l
PERSISTENCE AND DEGRADABILITY	Readily biodegradable		
BIOACCUMULATIVE POTENTIAL	Log P _{ow} = 0.05 Solvent component bioconcentration factor (BCF): 3.16		
MOBILITY IN SOIL	No data available		
OTHER ADVERSE EFFECTS	None known		

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL	Dispose of in accordance with local, state and federal regulations. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Empty containers may retain some product residues. Vapor from product residues may create a flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been thoroughly cleaned. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3.
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US EPA WASTE NUMBER & DESCRIPTION No information available

SECTION 14: TRANSPORT INFORMATION

This section provides basic shipping classification information. Refer to appropriate transportation regulations for specific requirements.

U.S. DOT

Proper Shipping Name: Resin Solution, *flammable*
Classification: 3
UN#: 1866
Packing Group: II
Hazard Label: Flammable Liquid

IMDG

Proper Shipping Name: Resin Solution, *flammable*
Classification: 3
UN#: 1866
Packing Group: II
EmS#: F-E, S-D
Hazard Label: Flammable Liquid

ICAO / IATA

Proper Shipping Name: Resin Solution, *flammable*
Classification: 3
UN#: 1866
Packing Group: II
Hazard Label: Flammable Liquid

ADR/RID

Proper Shipping Name: Resin Solution, *flammable*
Classification: 3
UN#: 1866
Packing Group: II
Hazard Label: Flammable Liquid

SECTION 15: REGULATORY INFORMATION

The components in this product are either listed or exempt from listing due to polymer exemption criteria for the following chemical listing inventories as indicated by an "X":

AICS	Australian Inventory of Chemical Substances	X
DSL	Canadian Domestic Substances List	
ECL	Korean Existing Chemicals List	X
ELINCS	European List of Notified Chemical Substances	
ENCs	Japanese Existing and New Chemical Substances	
IECSC	Inventory of Existing Chemical Substances in China	X
ISRAEL	Proposed Israel Hazardous Substances List	
NDSL	Canadian Non-Domestic Substances List	X
NZIoC	New Zealand Inventory of Chemicals	
PICCS	Philippines Inventory of Chemicals and Chemical Substances	X
SWISS	Giftelist 1 and Inventory of Notified New Substances	
TCSI	Taiwan Chemical Substances List	
TSCA	US Toxic Substances Control Act	X

INTERNATIONAL REGULATIONS

EU REGULATION (EC) No. 1907/2006 (REACH) Annex XIV - List of substances subject to authorization, *Substances of Very High Concern*: This product does not contain any SVHC listed substances.

EINECS All of the components of this product are included on the European Inventory of Existing Commercial Chemical Substances.

WHMIS CLASSIFICATION B3: Combustible Liquid

D1A: Very Toxic Material Causing Immediate and Serious Toxic Effects

D2B: Toxic Material Causing Other Toxic Effects

FEDERAL REGULATIONS

SARA 313 This product contains a chemical, 2-Butoxyethanol, which is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

111-76-2 2-Butoxyethanol 44 – 46%

SARA Section 311/312 (40 CFR 370) Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Pressure Hazard	No
Reactivity Hazard	No

CERCLA	This product, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional or state level pertaining to releases of this product.						
CLEAN WATER ACT	This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).						
CLEAN AIR ACT	This product does not contain any substances regulated as hazardous air pollutants (HAPS under Section 112 of the Clean Air Act Amendments of 1990). The following chemicals are listed under the U.S. Clean Air Act Section 111 SOCM Intermediate or Final VOC's (40CFR 60.489):						
	<table border="0"> <tr> <td>111-76-2</td> <td>2-Butoxyethanol</td> <td>44 – 46 %</td> </tr> <tr> <td>67-63-0</td> <td>2-Propanol</td> <td>4 – 6 %</td> </tr> </table>	111-76-2	2-Butoxyethanol	44 – 46 %	67-63-0	2-Propanol	4 – 6 %
111-76-2	2-Butoxyethanol	44 – 46 %					
67-63-0	2-Propanol	4 – 6 %					
OTHER FEDERAL	None known						
U.S. STATE REGULATIONS							
RIGHT TO KNOW	The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in Sections 2 and 15 of this Safety Data Sheet.						
CALIFORNIA PROP 65	No substances known to the state of California to cause cancer and/or reproductive toxicity were intentionally added to this product; however, this product may contain unknown trace amounts of substances known to the state of California to cause cancer and/or reproductive toxicity.						

SECTION 16: OTHER INFORMATION

DISCLAIMER	This product is intended for industrial use only and should be used in accordance with the manufacturer's recommendations. Some of the information presented and conclusions drawn herein are from sources other than direct test data on the product itself. The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. This SDS has been prepared in accordance with the requirements of the OSHA Hazard Communication Standard (29 CFR 1910.1200).
DATE OF REVISION	August 9, 2018, <i>replaces the October 11, 2017 version.</i>
REASON FOR REVISION	Updated the Hazards associated with 2-Butoxyethanol throughout based on the latest supplier information.
SDS PREPARED BY	Glen Pearson
SDS APPROVED BY	Robert Auerbach