SAFETY DATA SHEET

Revision Date 28/Dec/2017

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Description: **HYDREX® 100 33350-00**

Other means of identification

SAP ID(s): 20984 ; 20985; 203911
Material Code: 33350-00
Chemical Family Vinyl Ester Resin

Recommended use of the chemical and restrictions on use

Recommended Use Corrosion Resistant Resin
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer/Supplier:
Polynt Composites USA, Inc.
99 East Cottage Avenue
Carpentersville IL 60110

In Canada
Polynt Composites Canada Inc
29 Regan Road
Brampton, Ontario
L7A 1B2

Emergency Telephone Chemtrec: 1-800-424-9300 (in U.S. & Canada)
+1-703-741-5970 (international)

E-mail address MSDS@polynt.com

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Carcinogenicity	Sub-category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Chronic aquatic toxicity	Category 3
Flammable liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause cancer

Suspected of damaging fertility or the unborn child
May cause respiratory irritation
Causes damage to hearing through prolonged or repeated exposure if inhaled
Harmful to aquatic life with long lasting effects
Flammable liquid and vapor

Appearance Amber Opaque **Physical State** Liquid **Odor** Pungent

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Use only outdoors or in a well-ventilated area
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Do not breathe mist, vapors, spray
Do not eat, drink or smoke when using this product
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ ventilating/ lighting/ equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Wear protective gloves/protective clothing/eye protection/face protection
Avoid release to the environment

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
If skin irritation or rash occurs: Get medical advice/attention
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting
In case of fire: Use CO2, dry chemical, or foam to extinguish

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container to industrial incineration plant
Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC)
Not applicable
Other Information
May be harmful in contact with skin

Unknown acute toxicity	55.1 % of the mixture consists of ingredient(s) of unknown toxicity
Unknown aquatic toxicity	55.4 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%	Trade Secre
Styrene	100-42-5	42 - 46	
Silica, Amorphous, Fumed, Cryst.-Free	112945-52-5	<2.0	
Cobalt bis(2-ethylhexanoate)	136-52-7	<0.3	*

* The exact percentage (concentration) of composition has been withheld as a trade secret. If CAS number is "proprietary", the specific chemical identity has been withheld as a trade secret.

4. FIRST AID MEASURES

First Aid Measures

Eye Contact Immediately flush eyes for at least 15 minutes. Get medical attention.

Skin Contact Wash off with warm water and soap. Remove contaminated clothing and shoes. If skin irritation persists, call a physician. Wash contaminated clothing before reuse.

Inhalation Remove person to fresh air. If signs/symptoms continue, get medical attention. Keep patient warm and at rest. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Get medical attention immediately.

Ingestion Do NOT induce vomiting. Aspiration hazard if swallowed - can enter lungs and cause damage. This material may enter the lungs during vomiting. Never give anything by mouth to an unconscious person. GET IMMEDIATE MEDICAL ATTENTION.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects Inhalation of high vapor concentrations can cause central nervous system depression and narcosis. Irritating to eyes, respiratory system and skin. Harmful by inhalation, in contact with skin and if swallowed.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Carbon dioxide (CO2), Foam, Dry chemical, Water spray

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous combustion products Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases

Combustion/explosion hazards Flammable. Vapors may form explosive mixtures with air. Flash back possible over considerable distance. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed. Closed containers may rupture when exposed to extreme heat.

Protective Equipment and Precautions for Firefighters

Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective clothing. Thoroughly decontaminate all protective equipment after use. Evacuate all persons from the fire area to a safe location. Move non-burning material, as feasible, to a safe location as soon as possible. Fire fighters should be protected from potential explosion hazard while extinguishing the blaze. DO NOT extinguish a fire resulting from the flow of this flammable liquid until the flow of liquid is effectively shut off. This precaution will help prevent the accumulation of an explosive vapor-air mixture after the initial fire is extinguished. Use water spray to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Remove all sources of ignition. Evacuate personnel to safe areas. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Avoid contact with skin and eyes.

Other Information All equipment used when handling the product must be grounded.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Soak up with inert absorbent material and dispose of as hazardous waste. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Methods and material for containment and cleaning up

Methods for Containment Prevent spilled material from 1) contaminating soil, 2) entering sanitary sewers, storm sewers, and drainage systems, and 3) entering bodies of water or ditches that lead to waterways. Prevent spreading over a wide area (e.g. by containment or oil barriers).

Methods for Clean-up Soak up with inert absorbent material. Remove from surface water (e.g. by skimming or siphoning). Dispose of contaminated material as waste according to item 13.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Do not breathe vapor or mist. Avoid contact with skin, eyes or clothing. Wash hands before breaks and immediately after handling the product. Take off contaminated clothing and wash before reuse. Ensure adequate ventilation. Ground and bond containers when transferring material. Use spark-proof tools and explosion-proof equipment. Consult your supplier of promoters and catalysts for additional instructions on proper mixing and usage. Empty containers may retain product residue (liquid and/or vapor). Do not pressurize, cut, weld, braze, solder, drill, grind, or expose these containers to heat, flame, sparks, static electricity, or other sources of ignition as the container may explode and may cause injury or death. Empty drums should be completely drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed. Do not use compressed air for filling, discharging or handling.

Conditions for safe storage, including any incompatibilities

Storage Keep away from heat and sources of ignition. No smoking. Protect from direct sunlight. Keep containers tightly closed in a cool, well-ventilated place. To ensure maximum stability and maintain optimum resin properties, resins should be stored in closed containers at temperatures below 77°F (25°C).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits

Components with workplace control parameters.

Styrene (CAS #: 100-42-5)

ACGIH TLV	20 ppm TWA 40 ppm STEL A4 Not Classifiable as a Human Carcinogen
OSHA PEL	100 ppm TWA 200 ppm Ceiling
Industry PEL	While the federal workplace exposure limit for styrene is 100 ppm, OSHA accepted the styrene industry's proposal to voluntarily meet a PEL of 50 ppm on an 8 hour TWA and a Short Term Exposure Limit (STEL) of 100 ppm, 15 minute exposure.
Canada - Alberta OELs	40 ppm STEL 170 mg/m^3 STEL 20 ppm TWA 85 mg/m^3 TWA
Canada - Ontario OELs	35 ppm TWA 100 ppm STEL
Canada - British Columbia OELs	50 ppm TWA 75 ppm STEL
NIOSH IDLH	700 ppm
Mexico OEL	100 ppm STEL 425 mg/m^3 STEL 50 ppm TWA 215 mg/m^3 TWA (skin)

Silica, Amorphous, Fumed, Cryst.-Free (CAS #: 112945-52-5)

OSHA PEL	20 mppcf, 80 mg/m^3/%SiO2 TWA
NIOSH IDLH	3000 mg/m^3 - Immediately dangerous to life or health (IDLH)

Legend

TLV® (Threshold Limit Value)
TWA (time-weighted average)
STEL - Short Term Exposure Limit
IDLH - Immediately Dangerous to Life or Health
ACGIH (American Conference of Governmental Industrial Hygienists)
OSHA - Occupational Safety and Health Administration
NIOSH - National Institute for Occupational Safety and Health
OEL - Occupational Exposure Limit
PEL - Permissible Exposure Limit
SKIN: Skin Absorption

Appropriate engineering controls

Engineering Controls Use general ventilation to maintain airborne concentrations to levels that are below regulatory and recommended occupational exposure limits. Local ventilation may be required during certain operations. Use explosion-proof electrical equipment.

Individual protection measures, such as personal protective equipment

Eye/face Protection Safety glasses with side-shields. If splashes are likely to occur:. Tight sealing safety goggles. Ensure that eyewash stations and safety showers are close to the workstation location.

Skin Protection Wear protective nitrile rubber or Viton™ gloves. Gloves made of nitrile rubber or polyvinyl chloride (PVC) may be used for splash protection and brief or intermittent contact with styrenated polyester resin. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. Impervious clothing. Rubber or plastic boots.

Respiratory Protection None required if hazards have been assessed and airborne concentrations are maintained below the exposure limits listed in Section 8. Wear an approved air-purifying respirator with organic vapor cartridges and particulate filters where airborne concentrations may exceed exposure limits in Section 8 and/or there is exposure to dust or mists due to sanding,

grinding, cutting, or spraying. Use an approved positive-pressure air-supplied respirator with emergency escape provisions if there is any potential for an uncontrolled release, airborne concentrations are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Amber Opaque
Odor	Pungent
Odor threshold	0.2 ppm (Styrene)
Physical State	Liquid
pH	Not applicable
Flash point	32 °C / 89 °F
Flash Point Method:	Seta closed cup
Autoignition Temperature	490°C / 914°F (Styrene)
Boiling point / boiling range	146°C / 295°F (Styrene)
Melting point / freezing point	No information available
Flammability Limit in Air	
Lower	1.1% (Styrene)
Upper	6.1% (Styrene)
Specific Gravity	1.04 - 1.12 @ 25°C
Solubility	Insoluble in water
Evaporation rate	0.49 (BuAc = 1) (Styrene)
Vapor Pressure	5 mmHg @ 20°C (Styrene) 6.7 hPa (Styrene)
Vapor density	3.6 (Air = 1) (Styrene)
Explosive properties	No information available
Oxidizing Properties	No information available
Percent Volatile	45.0 %
VOC Content	486 g/l (calculated) product as supplied
Viscosity	450 - 650 cps @ 25°C
Partition coefficient	No information available
Decomposition temperature	No information available

10. STABILITY AND REACTIVITY

Reactivity
Unstable upon depletion of inhibitor.

Chemical Stability
Stable under normal conditions. Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Hazardous polymerization Polymerization can occur. Hazardous polymerization will occur if contaminated with peroxides, metal salts and polymerization catalysts. Product will undergo hazardous polymerization at temperatures above 150 F (65 C). Hazardous polymerization may occur upon depletion of inhibitor - may cause heat and pressure build-up in closed containers.

Conditions to Avoid
Heat, flames and sparks. Contamination by those materials referred to under Incompatible materials. Unstable upon depletion of inhibitor. Elevated temperature.

Incompatible materials
Strong acids. Strong oxidizing agents. Metal salts. Polymerization catalysts.

Hazardous decomposition products
Hydrocarbons. Carbon monoxide. Carbon dioxide (CO2). Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Primary Routes of Entry Eye contact, Ingestion, Inhalation, Skin Contact, Skin absorption

Acute toxicity

Styrene

Oral LD50	= 5000 mg/kg (Rat)
Dermal LD50	> 2000 mg/kg (Rat)
Inhalation LC50	= 11.8 mg/l (4 H) (Rat)

Silica, Amorphous, Fumed, Cryst.-Free

Oral LD50	= 3160 mg/kg (Rat)

Information on toxicological effects

Symptoms Symptoms of overexposure are dizziness, headache, tiredness, nausea, unconsciousness, cessation of breathing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eyes Irritating to eyes.

Skin Harmful by skin absorption. Contact causes skin irritation. Prolonged skin contact may defat the skin and produce dermatitis.

Inhalation Harmful by inhalation. May cause irritation of respiratory tract. Inhalation of high vapor concentrations can cause central nervous system depression and narcosis.

Ingestion Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration hazard if swallowed - can enter lungs and cause damage. Ingestion is not an anticipated route of exposure for this material in industrial use.

Irritation Irritating to eyes and skin.

Corrosivity Not corrosive.

Sensitization May cause sensitization of susceptible persons by skin contact.

Repeated dose toxicity In humans, styrene may cause a transient decrease in color discrimination and effects on hearing. Repeated or prolonged exposure may cause skin irritation and dermatitis, due to defatting properties of the product. May cause damage to the kidneys, liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled. May cause damage to the liver, eyes, brain, respiratory system, central nervous system through prolonged or repeated exposure if inhaled.

Mutagenic effects Styrene has given mixed positive and negative results in a number of mutagenicity tests. Styrene was not mutagenic without metabolic activation but gave negative and positive mutagenic results with metabolic activation.

Carcinogenicity .

Styrene

ACGIH	A4 - Not Classifiable as a Human Carcinogen
IARC	Group 2B - Possibly Carcinogenic to Humans
NTP	Reasonably anticipated to be human carcinogen

Cobalt bis(2-ethylhexanoate)

IARC	Group 2B - Possibly Carcinogenic to Humans

Legend *ACGIH (American Conference of Governmental Industrial Hygienists)*
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer

Reproductive Toxicity No information available.

Neurological effects No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Target organ effects Liver, Kidney, Central nervous system (CNS), Respiratory system.

Aspiration hazard No information available.

Unknown acute toxicity 55.1 % of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	5094 mg/kg
ATEmix (dermal)	2038 mg/kg mg/L
ATEmix (inhalation-vapor)	12 mg/L

12. ECOLOGICAL INFORMATION

Ecotoxicity

Styrene

Partition coefficient	2.95
Bioconcentration factor (BCF)	74
Algae	EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h)
	EC50 0.46 - 4.3 mg/L (Pseudokirchneriella subcapitata) (72h)
Fish	LC50 3.24 - 4.99 mg/L (Pimephales promelas) (96 h) flow-through
	LC50 19.03 - 33.53 mg/L (Lepomis macrochirus) (96 h) static
	LC50 6.75 - 14.5 mg/L (Pimephales promelas) (96 h) static
	LC50 58.75 - 95.32 mg/L (Poecilia reticulata) (96 h) static
Crustacea	EC50 3.3 - 7.4 mg/L 48 h

Cobalt bis(2-ethylhexanoate)

Algae	EC50 = 0.639 mg/L

Unknown aquatic toxicity
55.4 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Persistence/Degradability
No information available.

Bioaccumulation
No information available.

Other adverse effects
No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal Considerations Hazardous waste. Can be incinerated, when in compliance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

US EPA Waste Number D001 (IGNITABLE): When discarded in its purchased form, this material would be regulated under 40 CFR 261.21 as EPA Hazardous Waste Number D001 based on the characteristic of ignitability.

14. TRANSPORT INFORMATION

DOT

UN/ID no.	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	3
Packing Group	III
NAERG:	127

TDG

UN/ID no.	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	CLASS 3
Packing Group	PG III
NAERG:	127

MEX

UN/ID no.	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	3
Packing Group	PG III
NAERG:	127

IATA

UN/ID no.	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	3
Packing Group	III
Packing Instructions	355; 366
NAERG:	127

IMDG/IMO

UN/ID no.	UN1866
Proper shipping name	RESIN SOLUTION
Hazard Class	CLASS 3
Packing Group	PG III
EmS-No	F-E, S-E

15. REGULATORY INFORMATION

International Inventories

TSCA Inventory Status:	All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory. Listed on TSCA.
Canadian Inventory Status:	All components of this material are listed on the Canadian Domestic Substances List (DSL)
Australian Inventory Status:	This product contains only chemicals which are currently listed on the Australian Inventory of Chemical Substances
Korean Inventory Status:	This product contains only chemicals which are currently listed on the Korean Chemical Substances List
Philippine Inventory:	This product contains only chemicals that are currently listed on the Philippine Inventory of Chemicals and Chemical Substances
Japan ENCS:	This product contains only chemicals that are currently listed on the Japanese Inventory of Existing and New Chemical Substances
Chinese IECS:	This product contains only chemicals that are currently listed on the Chinese Inventory of Existing Chemical Substances

New Zealand Inventory: This product contains only chemicals which are currently listed on the New Zealand Inventory of Chemicals

US Federal Regulations

TSCA 12(b) - Export Notification:
This material does not contain any components that are subject to the US Toxic Substances Control Act (TSCA) Section 12(b) Export Notification requirements.

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS No.	Weight-%	SARA 313 Status
Styrene	100-42-5	42 - 46	Listed
Cobalt bis(2-ethylhexanoate)	136-52-7	<0.3	Listed

EPCRA: Emergency Planning and Community Right-to-Know Act
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)
This product contains the following listed substances:

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Styrene 100-42-5	1000 lb			Listed

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)
This product contains the following HAPs:

Chemical Name	CAS No.	Weight-%	HAPS data
Styrene	100-42-5	**42 - 46**	
Cobalt bis(2-ethylhexanoate)	136-52-7	**<0.3**	Listed

CERCLA
This product contains the following reportable quantities:

Chemical Name	40 CFR 302.4 RQ	40 CFR 355 EHS TPQs
Styrene	1000 lb 454 kg	

Chemical Weapons Convention (CWC)
This product does not contain any listed substances.

State Regulations

California Proposition 65
WARNING: This material contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. The California Safe Drinking Water and Toxic Enforcement Act of 1986 requires that clear and reasonable warning be given prior to exposing any person to this chemical.

Canada

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

16. OTHER INFORMATION

NFPA Rating **Health** 2 **Flammability** 3 **Instability** 1

Prepared By Polynt Regulatory Department

Revision Date	28/Dec/2017
Revision Note	None
Former date	New

This information is provided in good faith and is correct to the best of Polynt's knowledge as of the date hereof and is designed to assist our customers; however, Polynt makes no representation as to its completeness or accuracy. Our products are intended for sale to industrial and commercial customers. We require customers to inspect and test our products before use and to satisfy themselves as to suitability for their specific applications. Any use which Polynt customers or third parties make of this information, or any reliance on, or decisions made based upon it, are the responsibility of such customer or third party. Polynt disclaims responsibility for damages, or liability, of any kind resulting from the use of this information. THERE ARE NO WARRANTIES OR REPRESENTATIONS, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THIS INFORMATION OR TO THE PRODUCT IT DESCRIBES. IN NO EVENT SHALL POLYNT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES.

End of Safety Data Sheet