MATERIAL SAFETY DATA SHEET

Trade Name: ATPRIME® 2B

Revision Date: 2019-06-12 Compilation Date: 2011-05-26

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME **ATPRIME® 2B**

MANUFACTURER

NCS Resins, Durban Head Office
9 Pineside Road, New Germany 3610
Kwa-Zulu Natal, South Africa

Tel: +27 031 713 0600 Fax: +27 031 705 9858

Emergency Telephone: +27 041 627 3283

SUPPLIER

Aurora Glass Fibre (NZ) Ltd
3/16 Zelanian Drive, East Tamaki,
Auckland 2013, New Zealand

Tel: +64 09 273-3540 Fax: +64 09 273-3565

Emergency Telephone No. +64 09 273-3540

Poisons Information Centre **0800 764 766** (from anywhere in New Zealand)

2. HAZARD IDENTIFICATION

Classified as Hazardous according to the New Zealand Hazardous Substances Regulations. Classified as Dangerous Goods for transport according to New Zealand Standard.

DG Classification: Class 3
UN Number: 1866, Resin Solution, Flammable
EPA New Zealand Approval Code: HSR001221

HSNO Classification:

3.1C	Flammable Liquid
6.1E	Acute Toxicity, Oral/Dermal
6.1D	Acute Toxicity, Inhalation
6.3A	Substance that is corrosive or irritating to the skin
6.4A	Substance that is corrosive or irritating to the eye
6.6B	Suspected human mutagen
6.7B	Suspected human carcinogen
6.9B	May cause damage to target organs through prolonged/repeated exposure
9.1C	Aquatic ecotoxicity, Fish

Hazard Statement:

H226	Flammable liquid and vapour
H315	Causes skin irritation
H317	May cause an allergic reaction
H319	Causes serious eye irritation
H332	Harmful if inhaled
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child

H372 Causes damage to organs through prolonged or repeated exposure

Prevention:

P201 Obtain special instruction before use
P202 Do not handle until all safety precautions have been read and understood
P210 Keep away from heat, sparks, open flames and hot surfaces. – No smoking
P240 Ground/bond container and receiving equipment
P241 Use explosion-proof electrical ventilating, lighting and other equipment
P242 Use only non-sparking tools
P243 Take precautionary measures against static discharge
P260 Do not breath fumes, mists, vapours or spray
P262 Do not get in eyes, on skin, or on clothing
P270 Do not eat, drink or smoke when using this product
P280 Wear protective gloves, protective clothing and eye or face protection

Response:

P314 Get medical advice or attention if you feel unwell
P330 Rinse mouth
P362 Take off contaminated clothing and wash before reuse
P301+P312 IF SWALLOWED: Call a Poison Centre or doctor
P302+P352 IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing
P308+P313 If exposed or concerned: Get medical advice
P333+P313 If skin irritation or rash occurs: Get medical advice
P337+P313 If eye irritation persists: Get medical advice
P370+P378 In case of fire, use carbon dioxide, dry chemical, water fog. Alcohol resistant foam is the preferred firefighting medium, but if it is not available, normal foam can be used

Storage:

P405 Store locked up
P422 Store contents below 25°C
P403+P233 Store in well ventilated place. Keep container tightly closed

Disposal:

P501 Dispose of contents to an approved waste disposal plant

HMIS: **Health: 2*** **Flammability: 3** **Reactivity: 2**

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No	Weight %	Status
Styrene	100-42-5	49.0	Hazardous
Polyester Resin	Proprietary	45.0	Not Hazardous
Methyl Methacrylate	80-62-6	6.0	Hazardous

4. FIRST AID MEASURES

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.

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

Inhalation
Move 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 laboured, administer oxygen. Get medical attention immediately.

Ingestion
DO NOT INDUCE VOMITTING. ASPIRATION HAZARD. This material may enter the lungs during vomiting. Never give anything by mouth to an unconscious person. GET IMMEDIATE MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

Flammability	Flammable liquid.
Suitable Extinguishing Media	Carbon dioxide (CO2), Foam, Dry Chemical, Water Spray.
Hazardous Combustion Products	Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapours and gases.
Fire/Explosion Hazard	Flammable. Vapours may form explosive mixtures with air. Flash back possible over considerable distance. This material may polymerize (react) when its container is exposed to heat (as in during a fire). This polymerization increases pressure inside a closed container and may result in the violent rupture of the container. Empty containers may retain product residue (liquid and/or vapour). Do not pressurize, cut, weld, braze, solder, drill, grind or expose these containers to heat, flame, spark, static electricity, or other sources of ignition as the container may explode and may cause injury or death.
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 vapour-air mixture after the initial fire is extinguished. Use water spray to cool fire-exposed containers.

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

6. ACCIDENTAL RELEASE MEASURES

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 vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

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.

Methods for Containment
Prevent spilled material from contaminating soil, entering sanitary sewers, storm sewers, and drainage systems and 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 materials as waste according to item 13.

7. HANDLING AND STORAGE

Handling
Do not breathe vapour or mist. Avoid contact with eyes, skin and 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 vapour). 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 completed drained and properly bunged. Empty drums should be promptly returned to a drum reconditioner or properly disposed.

Storage
Keep away from heat and sources of ignition. No smoking. Keep away 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
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 voluntary meet

	a PEL of 50 ppm on an 8 hour TWA and a Short Term Exposure (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 Immediately dangerous to life or health IDLH
Mexico OEL	100 ppm STEL 425 mg/m^3 STEL 50 ppm TWA 215 mg/m^3 TWA (skin)

Methyl Methacrylate (CAS #: 80-62-6)

ACGIH – TLV	50 ppm TWA 100 ppm STEL
OSHA PEL	100 ppm TWA 410 mg/m^3 TWA
Canada – Alberta OELs	100 ppm STEL 410 mg/m^3 STEL 50 ppm TWA 205 mg/m^3 TWA
Canada – Ontario OELs	50 ppm TWA 100 ppm STEL
Canada – British Columbia OELs	50 ppm TWA 100 ppm STEL
NIOSH IDLH	1000 ppm Immediately dangerous to life or health IDLH
Mexico OEL	125 ppm STEL 510 mg/m^3 STEL 100 ppm TWA 410 mg/m^3 TWA

Legend

ACGIH – American Conference of Governmental Industrial Hygienists
TLV® – Threshold Limit Value
TWA – Time Weighted Average
STEL – Short Term Exposure Limit
OSHA – Occupational Safety and Health Administration
PEL – Permissible Exposure Limit
OEL – Occupational Exposure Limit
NIOSH – National Institute for Occupational Safety and Health
IDLH – Immediately Dangerous to Life or Health
SKIN – Skin Absorption

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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 equipment.

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 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 vapour 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pink - Clear
Odour	Pungent
Odour Threshold	0.2 ppm (Styrene) 0.05 – 0.21 ppm (Methyl Methacrylate)
Physical State	Liquid
pH	No information available
Flash Point	26°C / 79°F
Flash Point Method	Seta closed cup
Autoignition Temperature	806°F – 914°F / 430°C – 490°C
Boiling Point/Range	212°F – 295°F / 100°C – 146°C
Freezing Point	< 0°F / <-18°C
Flammability Limit in Air	
Lower	1.1 %
Upper	12.5%
Specific Gravity	0.98 – 1.03 @ 25°C
Solubility	Insoluble (Water)
Evaporation Rate	0.49 – 3.1 (BuAc = 1)
Vapour Pressure	6.12 – 20 mmHg @ 68°F / 20°C
Vapour Density	3.45 – 3.6 (Air = 1)
Percent Volatile, wt.%	53 – 57% by weight
VOC Content	553 g/l (calculated) product as supplies
Viscosity	200 – 300 cps @ 25°C

10. STABILITY AND REACTIVITY

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

Conditions to Avoid
Heat, flame and sparks. Contamination by those materials referred to under Incompatible Materials.

Incompatible Materials
Strong acids. Strong oxidizing agents. Metal salts. Polymerization catalysts. Amines. Halogenated compounds.

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

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).

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Styrene

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

Methyl Methacrylate

Oral LD50	8400 mg/kg (Rat)
Dermal LD50	> 9400 mg/kg (Rabbit)
Inhalation LC50	7093 mg/L (Rat) (4h)

Eye Effects Studies indicate that exposures to concentrations of styrene above 200 ppm cause irritation of the eyes. Styrene causes transient moderate eye irritation without corneal involvement.

Sensitization May cause sensitization by skin contact.

Chronic Toxicity
Components influencing toxicology.

Styrene

NTP	Reasonably anticipated to be human carcinogen.
IARC	Group 2B – Possibly carcinogenic to humans.

Legend IARC – International Agency for Research on Cancer
NTP – National Toxicology Program

Repeated Dose Toxicity In humans styrene may cause a transient decrease in colour 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.

Sensitization Contains methacrylates, which are known to be weak sensitizers.

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.

Development Toxicity Results from studies in experimental animals indicate little or no potential for styrene to produce developmental toxicity.

Target Organ(s) Liver, Kidney, Central Nervous System (CNS), Respiratory System.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Styrene

Log Kow	2.95
Bio concentration factor (BCF)	74
Algae	EC50 = 1.4 mg/L (Pseudokirchneriella subcapitata) (72h)
	EC50 0.46 – 4.3 mg/L (Pseudokirchneriella subcapitata) (72h)
Aquatic Invertebrates	EC50 3.3 – 7.4 mg/L (Daphnia magna) (48h)
Fish	LC50 3.24 – 4.99 mg/L (Pimephales promelas) (96h) flow-through
	LC50 19.03 – 33.53 mg/L (Lepomis macrochirus) (96h) static
	LC50 6.75 – 14.5 mg/L (Pimephales promelas) (96h) static
	LC50 58.75 – 95.32 mg/L (Poecilia reticulate) (96h) static

Methyl Methacrylate

Log Kow	0.7
Aquatic Invertebrates	EC50 69 mg/L (Daphnia magna) (48h)
Fish	LC50 243 - 275 mg/L (Pimephales promelas) (96h) flow-through
	LC50 125.5 – 190.7 mg/L (Pimephales promelas) (96h) static
	LC50 170 – 206 mg/L (Lepomis macrochirus) (96h) flow-through
	LC50 153.9 – 341.8 mg/L (Lepomis macrochirus) (96h) static
	LC50 > 79mg/L (Oncorhynchus mykiss) (96h) flow-through
	LC50 > 79mg/L (Oncorhynchus mykiss) (96h) static
	LC50 326.4 – 426.9 mg/L (Poecilia reticulate) (96h) static

13. DISPOSAL CONSIDERATIONS

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-No	UN1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	III
NAERG	127

TDG

UN-No	UN1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	III
NAERG	127

IATA

UN-No	UN1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	III
Packing Instructions	355,366
NAERG	127

IMDG/IMO

UN-No	UN1866
Proper Shipping Name	RESIN SOLUTION
Hazard Class	3
Packing Group	III
EMS-No	F-E, S-E
NAERG	127

15. REGULATORY INFORMATION

International Inventories

TSCA Inventory Status:
All components of this material are listed on the US Toxic Substances Control Act (TSCA) inventory.

Canadian Inventory Status:
All components of this material are listed on the Canadian Domestic Substances List (DSL).

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Australian Inventory Status:
This product contains one or more chemicals currently not 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 Status:
This product contains one or more chemicals that are currently not on the Philippines 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

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 Title 40 of the Code of Federal Regulations, Part 372:

Component	CAS No	Weight-%	SARA 313 Status
Styrene	100-42-5	49.0	Listed
Methyl Methacrylate	80-62-6	6.0	Listed

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	Yes

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.

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

Component	CAS No	Weight-%	HAPs Data
Styrene	100-42-5	49.0	
Methyl Methacrylate	80-62-6	6.0	Listed

CERCLA
This product contains the following reportable quantities:

Component	40 CFR 302.4 RQ	40 CFR 355 EHS TPQs
Styrene	1000 lb / 454 kg	
Methyl Methacrylate	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.

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class B2 – Flammable Liquid
D2A – Very toxic materials
D2B – Toxic materials
F – Dangerous reactive material

Component	CAS No	WHMIS Ingredient Disclosure List
Styrene	100-42-5	0.1%
Methyl Methacrylate	80-62-6	1%

16. OTHER INFORMATION

Reference: NCS Resins South Africa MSDS on Atprime 2B 26 May 2011
Compiled by: Aurora Glass Fibre (NZ) Ltd
Preparation Date: 12 June 2019