SAFETY DATA SHEET (SDS)

Section 1. Identification

Product identifier	SERIGLASS
Other means of identification	FG
Recommended use and restrictions on use	UV screen printing inks and varnishes
Initial supplier identifier	Aria Inks. 101-1079, rue des Forges, Terrebonne, QC, J6Y 0J9 (Canada) Tél. (450) 966-9000
Emergency telephone number/restriction on use	Canada – CANUTEC Number 24 hours 613-996-6666

Section 2. Hazard Identification

Classification of hazardous product (name of the category or subcategory of the hazard class)

Skin corrosion/irritation (Category 1B)
Skin sensitisation (Category 1)
Specific target organ toxicity, single exposure; respiratory tract irritation (Category 3)
Specific target organ toxicity, single exposure; narcotic effects (Category 3)
Reproductive toxicity (Category 2)
Hazardous to the aquatic environment acute hazard (Category 2)
Hazardous to the aquatic environment short/long term hazard (Category 1)

Information elements (symbols, signal words, hazard statements and precautionary statements of the category/subcategory)

Warning
H314 Causes severe skin burns and eye damage
H317 May cause an allergic skin reaction
H335 May cause respiratory irritation
H336 May cause drowsiness or dizziness
H361 May damage fertility or the unborn child
H401 Toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects

Prevention
P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P260+P261 Do not/avoid breath dust/fume/gas/mist/vapours/spry P264 Wash hands/nails/face/eyes thoroughly after handling. P271 Use only outdoors or in a well ventilated area. P272 Contaminated work clothing should not be allowed out of the workplace P273 Avoid release to the environment P280 Wear gloves/protective clothing/gloves/eye protection/face protection.

Response
IF SWALLOWED: P301 + P310 Immediately call a Poison Center/doctor if you feel unwell.P330 Rinse mouth. P331 Do NOT induce vomiting.
IF ON SKIN: P302+P352 Wash with plenty of water. P333+P313 If skin irritation or rash occurs: Get medical advice attention. P362 + P364 Take off contaminated clothing and wash it before reuse.
IF ON SKIN/ OR HAIR: P303 + P361 + P353 Take off immediately all contaminated clothing. Wash with plenty of water (or shower).
IF INHALED: P304 + P340 Remove person to fresh air and keep comfortable for breathing P310 Immediately call a Poison Center/doctor.
IF IN EYES: P305 + P351 + P338 Rinse cautiously with water. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a Poison Center/doctor.
IF EXPOSED OR CONCERNED: P308 + P313 Get medical advice/attention
ENVIRONMENT P391 Collect spillage

Storage
P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up.

Disposal
P501 Dispose of contents/container into safe container in accordance with local, regional or national regulations.

Other hazards known	None

Section 3. Composition/Information on Ingredients

Chemical name (common name/synonyms)	CAS number or other	Concentration (%)*
Acrylic oligomer	-----	30 – 60 %
Blend of Acrylated Monomers	-----	3 – 15 %

Photoinitiator Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide) 1-Hydroxycyclohexyl phenyl ketone N-Méthyldiéthanolamine	 75980-60-8 947-19-3 105-59-9	 3 – 15 % 1 – 10 % 0,5 – 5 %
Phosphate ester	-----	3 – 15 %

*Statement - This safety data sheet provides concentration range(s) instead of the actual concentration(s) considered trade secret(s)

Section 4. First-Aid Measures

Inhalation	IF INHALED: If overexposure remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration or give oxygen by trained personnel. If symptoms persist, seek medical attention.
Ingestion	IF SWALLOWED: Immediately call a doctor. Do NOT induce vomiting. Prevent aspiration of vomit. Rinse mouth thoroughly with water. Never give anything by mouth if the victim is rapidly losing consciousness, or is unconscious or convulsing.
Skin contact	IF ON SKIN: Remove contaminated clothing, wash immediately with soap and water (20 - 30 minutes). If skin irritation occurs: Get medical attention. Wash contaminated clothing before reuse. Discard or decontaminate footwear before reuse.
Eye contact	IF IN EYES, Rinse cautiously with water for several minutes (20 - 30 minutes). Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Most important symptoms and effects (acute or delayed)	Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness. May damage fertility or the unborn child.
Indication of immediate medical attention/special treatment	In all cases, call a doctor. Do not forget this document.

Section 5. Fire-Fighting Measures

Specific hazards of the hazardous product (hazardous combustion products)

Carbon monoxide and dioxide, nitrogen oxides, acrid fumes and smoke.

Suitable and unsuitable extinguishing media

In case of fire: Use Carbon dioxide, dry chemical, foam, water spray, water.

Special protective equipment and precautions for fire-fighters

During a fire, irritating/toxic fumes may be generated. Do not enter fire area without proper protection. Firefighters should wear proper protective equipment as required.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Evacuate non-emergency personnel. Isolate the area and prevent access. Control source of the leak. Ensure clean-up is conducted by trained personnel only. All persons dealing with clean-up should wear the appropriate protective equipment (See Section 8). Prevent the spill spread into drains, sewers, water supplies, or soil. Eliminate all ignition sources (no smoking, flares, sparks or flames) in immediate area. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.

Methods and materials for containment and cleaning up

Avoid prolonged exposure. Stop leak if you can do it without risk. Spill should be contained with inert material and disposed into suitable retaining area. Do not touch or walk through spilled material. Small volumes of liquid may be contained or absorbed into an appropriate absorbent. Keep away from all watercourses. Do not flush down storm or sanitary sewer. Dispose of in accordance with local, provincial and federal regulations.

Section 7. Handling and Storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not/avoid breath dust/fume/gas/mist/vapours/spry. Wash hands/nails/face/eyes thoroughly after handling. Use only outdoors or in a well ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear gloves/protective clothing/gloves/eye protection/face protection.

Conditions for safe storage, including any incompatibilities

Store in a cool, well-ventilated area. Keep container closed when not in use. Do not handle or store near open flames, heat or other sources of ignition. Store away from incompatible materials (Section 10). Inspect all incoming containers to make sure they are properly labeled and not damaged. Storage area should be clearly identified, clear of obstruction and accessible only to trained personnel. Inspect periodically for damage or leaks. Storage temperature: 15 - 27 °C.

Section 8. Exposure Controls/Personal Protection

Control parameters (biological limit values or exposure limit values and source of those values)

Exposure limits: ACGIH – TLV-TWA Acrylic Oligomer 20ppm (TWA)

Appropriate engineering controls

Use product in well-ventilated areas. Do not spray the product. Local exhaust ventilation system is recommended to maintain concentrations of contaminants below exposure limits. Supply emergency safety/quick-drench shower, eyewash station and washing facilities available in work area and near handling area. Where such systems are not effective, wear suitable personal protection equipment which performs satisfactorily and meets recognized standards.

Individual protection measures/personal protective equipment

Gloves: Neopren gloves or equivalent; Clothing: use suitable protective clothing to prevent any possibility of skin contact; Respiratory: Not required if working area is well ventilated. Use a NIOSH approved respirators if the exposure limits are unknown; Equipment: Safety glasses,

chemical resistant. Special instructions for protection and hygiene: Wash hands/nails/face thoroughly after handling. Do not eat, drink or smoke when using this product. Practice good personal hygiene after using this material. Remove and wash contaminated work clothing before re-use. Educate and train employees in the safe use and handling of this product. Follow all label instructions.

Section 9. Physical and Chemical Properties

Appearance, physical state/colour	Liquid	**Vapour pressure**	Not available
Odour	Slightly acrylic odour	**Vapour density**	Not available
Odour threshold	Not available	**Relative density**	Not available
pH	Not available	**Solubility**	Insoluble
Melting/freezing point	Not available	**Partition coefficient - n-octanol/water**	Not available
Initial boiling point/range	Not available	**Auto-ignition temperature**	Not available
Flash point	> 100 ^{o}C (212 ^{o}F)	**Decomposition temperature**	Not available
Evaporation rate	Not available	**Viscosity**	Not available
Flammability (solids and gases)	Not available	**VOC**	Not available
Upper and lower flammability/explosive limits	Not available	**Other**	None known

Section 10. Stability and Reactivity

Reactivity

Stable under normal conditions.

Chemical stability

Yes, Stable under the recommended storage and handling conditions prescribed.

Possibility of hazardous reactions

Non under normal conditions of storage and use.

Conditions to avoid (static discharge, shock or vibration)

Heat and sun light; the product must be stored in a dry and dark area; the temperature must not exceed 27 deg. C.

Incompatible materials

Avoid contact with strong oxidizing agents, peroxides or other polymerisation initiators, strong acid or bases, metallic powders or pigments.

Hazardous decomposition products

Carbon mono and dioxide, nitrogen oxides, other toxic fumes.

Section 11. Toxicological Information

Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact)

Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation. May cause drowsiness or dizziness. May damage fertility or the unborn child.

Symptoms related to the physical, chemical and toxicological characteristics

No specific information available.

Delayed and immediate effects (chronic effects from short-term and long-term exposure)

Skin Sensitization – May cause allergic skin reaction. Respiratory Sensitization – May cause severe respiratory system irritation;
Germ Cell Mutagenicity – Not available; Carcinogenicity – Not available; Reproductive Toxicity – Not available;
Specific Target Organ Toxicity — Single Exposure – Not available; Specific Target Organ Toxicity — Repeated Exposure – Not available;
Aspiration Hazard – May cause respiratory sensitization. Repeated or prolonged inhalation may cause toxic effects; Health Hazards Not Otherwise Classified – No data available.

Numerical measures of toxicity (ATE; LD_{50} & LC_{50})

Acrylic Oligomer LD_{50} Oral Rat – >2000 mg/kg; LD_{50} Dermal – Rabbit >2000 mg/kg; LC_{50} Inhalation > 5 mg/l; Acrylic Oligomer LD_{50} Oral – Rat > 2000 mg/kg; LD_{50} Dermal – Rabbit >2000 mg/kg; LC_{50} Inhalation – Rat > 5 mg/l 4hr; Acrylic Oligomer LD_{50} Oral – Rat > 5000 mg/kg; LD_{50} Dermal – Rabbit >2000 mg/kg; LC_{50} Inhalation – Rat 4hr No data; Acrylated Monomer LD_{50} Oral – Rat >5000 mg/kg; LD_{50} Dermal – Rabbit 3600 mg/kg; LC_{50} Inhalation – Rat 4hr No data; CAS 947-19-3 LD50 Oral – Rat >2500 mg/kg; LD50 Dermal – Rat >5000 mg/kg; LC50 Inhalation – Rat > 1mg/l; CAS 105-59-9 LD_{50} Oral – Rat >2000 mg/kg; LD_{50} Dermal – Rabbit >2000 mg/kg; LC_{50} Inhalation – Rat > 5 mg/l (Dust/Mist); ATE not available in this document.

Section 12. Ecological Information

Ecotoxicity (aquatic and terrestrial information)

Fish toxicity Acrylic Oligomer LC50 12.6 mg/l (Pimephales promelas - 96h); Acrylic Oligomer LC50 > = 100 mg/l (Brachydanio rerio - 96h); LC50 28.5 mg/l (Oncorhychus mykiss - 96h); Acrylated Monomer LC50 1 - 10 mg/l (Freshwater - 96h); CAS 75980-60-8 LC50 ~6.53 mg/l (Oryzias latipes –Red killifish - 48h); CAS 947-19-3 LC50 24 mg/l (Brachydanio rerio - Zebra fish - 96h); CAS 105-59-9 LC50 >1000 mg/l (Fathead Minnow -Pimephales promelas - 96h).

Invertebrate toxicity Acrylic Oligomer EC50 = 5.46 – 9.83mg/l (Daphnia magna – 48h); Acrylic Oligomer EC50 > = 100 mg/l (Water Flea (Daphnia magna) 48h); CAS 75980-60-8EC50 10 – 3.53 mg/l Daphnia magna 48h); CAS 947-19-3 EC50 = 53.9 mg/l (Daphnia magna – 48h); CAS 105-59-9 EC50 = 230 mg/l (Water flea -Daphnia magna – 48h)

Aquatic plant and Algae toxicity Acrylic Oligomer EC50 12.5 mg/L (Pseudokirchneriella subcapitata 72h); Acrylic Oligomer EC50 > 0.17 mg/L (Pseudokirchneriella subspicatus 96h); EC50 > 0.04 mg/L (Desmodesmus subspicatus 72h); Acrylated Monomer EC50 Test Growth Inhibition 1 – 10 mg/L (Algae 72h); CAS 75980-60-8 EC20 > 1000 mg/L (Activated sludge 3h); EC80 > 1000 mg/L (Activated sludge 3h); CAS 947-19-3 EC50 14.4 mg/L (Desmodesmus magna - 72h); CAS 105-59-9 EC50 37 mg/L (Green Algae -Desmodesmus subspicatus - 72h).

Persistence and degradability	CAS: 75980-60-8: Water degradation (%) 70-80: 14 days;

Bioaccumulative potential	CAS: 75980-60-8: (BCF: ~22 – 32, Freshwater fish
Mobility in soil	No data available
Other adverse effects	Toxic to aquatic life. Very toxic to aquatic life with long lasting effects

Section 13. Disposal Considerations

Information on safe handling for disposal/methods of disposal/contaminated packaging

Dispose of contents/container into safe container in accordance with local, regional or national regulations.

Section 14. Transport Information

UN number; Proper shipping name; Class(es); Packing group (PG) of the TDG Regulations

UN 3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. ISOBORNYL ACRYLATE (5-ETHYL -1, 3- DIOXAN -5-YL) METHYL ACRYLATE);: HAZARD CLASS: 9; PG:III.

UN number; Proper shipping name; Class(es); Packing group (PG) of the IMDG (maritime)

UN 3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. ISOBORNYL ACRYLATE (5-ETHYL -1, 3- DIOXAN -5-YL) METHYL ACRYLATE);: HAZARD CLASS: 9; PG:III.

UN number; Proper shipping name; Class(es); Packing group (PG) of the IATA (air)

UN 3082; ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID N.O.S. ISOBORNYL ACRYLATE (5-ETHYL -1, 3- DIOXAN -5-YL) METHYL ACRYLATE);: HAZARD CLASS: 9; PG:III.

Special precautions (transport/conveyance)	None
Environmental hazards (IMDG or other)	Marine Pollutant
Bulk transport (usually more than 450 L in capacity)	Possible

Section 15. Regulatory Information

Safety/health Canadian regulations specifics	This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR).
Environmental Canadian regulations specifics	Refer to Section 3 for ingredient(s) of the DSL

Safety/health/environmental outside regulations specifics

United States OSHA information: This product is regulated according to OSHA (29 CFR).
United States EPA (Environmental Protection Agency) information: 40 CFR Refer to the ingredients listed in Section 3 & Sections 12; 13 & 14.
United States TCSA information: Refer to the ingredients listed in Section 3.

Section 16. Other Information

Date of the latest revision of the safety data sheet	September 07, 2018 - version 01
References	Safety Data Sheets from manufacturer/supplier & from Sigma-Aldrich.com & Echa.eurpea.eu

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
ATE	Acute toxicity estimate
CAS	Chemical Abstract Service
DSL	Domestic Substance List
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
LC	Lethal concentration
LD	Lethal Dosage
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program (U.S.A.)
OSHA	Occupational Safety and Health Administration (U.S.A.)
PEL	Permissible Exposure Limit
STEL	Short-term Exposure Limit
TDG	Transport of dangerous goods in Canada
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System