

Riva Star Aqua (Riva Star Aqua Step 1 and Riva Star Step 2) SDI (North America) Inc.

Version No: 2.4

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **15/09/2020** Print Date: **13/04/2021** L.GHS.USA.EN

SECTION 1 Identification

Product	Identifier
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Product name	Riva Star Aqua (Riva Star Aqua Step 1 and Riva Star Step 2)
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses (Riva Star Aqua is comprised of Riva Star Aqua Step 1 and Riva Star Step 2) for use as a tooth desensitising agent.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	SDI (North America) Inc.	SDI Limited	SDI Germany GmbH
Address	1279 Hamilton Parkway Itasca IL 60143 United States	3-15 Brunsdon Street Bayswater VIC 3153 Australia	Hansestrasse 85 Cologne D-51149 Germany
Telephone	+1 630 361 9200	+61 3 8727 7111	+49 0 2203 9255 0
Fax	+1 630 361 9222	+1 630 361 9222	+1 630 361 9222
Website	Not Available	www.sdi.com.au	www.sdi.com.au
Email	Not Available	info@sdi.com.au	germany@sdi.com.au
	l		
Registered company name	SDI Brasil Industria E Comercio Ltda		
Address	Avenida Paulista, 2300-Pilotis, Bela Vista Sao Paulo - SP CEP 01310-300 Brazil		
Telephone	+55 11 3092 7100		
Fax	+1 630 361 9222		
Website	www.sdi.com.au		
Email	brasil@sdi.com.au		

Emergency phone number

Association / Organisation	SDI Limited
Emergency telephone numbers	131126 Poisons Information Centre
Other emergency telephone numbers	+61 3 8727 7111

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)



Eye Irritation Category 2A, Skin Corrosion/Irritation Category 2

Label elements





Signal word	Warning
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Hazard statement(s)	
H31	Causes serious eye irritation.
H31	Causes skin irritation.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P102	Keep out of reach of children.
P234	Keep in original container.
P264	Wear skin and hands thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P363	Wash contaminated clothing before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302+P352	IF ON SKIN: Wash with plenty of water.
P301+P310	If SWALLOWED: Immediately call a POISON CENTRE or doctor/physician.

Precautionary statement(s) Storage

P405 Store locked up.

Precautionary statement(s) Disposal

Dispose of content according to local regulations.

SECTION 3 Composition / information on ingredients

P501

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Not Available	-	Riva Star Aqua Step 1 contains:
7775-41-9	20-30	silver(1) fluoride
7697-37-2	<2.5	nitric acid
7732-18-5	balance	water
Not Available	-	Riva Star Step 2 contains:
Not Available	100	Ingredients determined not to be hazardous

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	Hold eyelids apart and flush the eye continuously with running water. Continue to flush until advised to stop by a Poisons Information Centre (Australia 131 126), or a doctor, or for at least 15 minutes.
Skin Contact	Remove contaminated clothing. Flush skin with running water.
Inhalation	Not expected due to dose volume. If affected, remove from contaminated area.
Ingestion	Rinse mouth. Give a glass of milk or water. Contact a doctor or Poisons Information Centre.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to strong acids:

- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues. INGESTION:
- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.

Continued...

Riva Star Aqua (Riva Star Aqua Step 1 and Riva Star Step 2)

- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:

Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.

Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjuctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
- Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
- Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).

[Ellenhorn and Barceloux: Medical Toxicology]

For acute or short term repeated exposures to fluorides:

- Fluoride absorption from gastro-intestinal tract may be retarded by calcium salts, milk or antacids.
- Fluoride particulates or fume may be absorbed through the respiratory tract with 20-30% deposited at alveolar level.
- Peak serum levels are reached 30 mins. post-exposure; 50% appears in the urine within 24 hours.
- For acute poisoning (endotracheal intubation if inadequate tidal volume), monitor breathing and evaluate/monitor blood pressure and pulse frequently since shock may supervene with little warning. Monitor ECG immediately; watch for arrhythmias and evidence of Q-T prolongation or T-wave changes. Maintain monitor. Treat shock vigorously with isotonic saline (in 5% glucose) to restore blood volume and enhance renal excretion.
- Where evidence of hypocalcaemic or normocalcaemic tetany exists, calcium gluconate (10 ml of a 10% solution) is injected to avoid tachycardia.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Fluorides in urine	3 mg/gm creatinine	Prior to shift	B, NS
	10mg/gm creatinine	End of shift	B, NS

B: Background levels occur in specimens collected from subjects NOT exposed

NS: Non-specific determinant; also observed after exposure to other exposures.

SECTION 5 Fire-fighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- Carbon dioxide

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. DO NOT approach containers suspected to be hot. Cool fire exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Equipment should be thoroughly decontaminated after use.
Fire/Explosion Hazard	 Non combustible. Not considered a significant fire risk, however containers may burn. Decomposition may produce toxic fumes of: hydrogen fluoride and silver/silver oxides May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	 Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment. Contain and absorb spill with sand, earth, inert material or vermiculite. Wipe up. Place in a suitable, labelled container for waste disposal. 						
Major Spills	Chemical Class:acidic compounds, inorganic For release onto land: recommended sorbents listed in order of priority. SORBENT TYPE RANK APPLICATION COLLECTION LIMITATIONS						

LAND SPILL - SMALL				
foamed glass - pillows	1	throw	pitchfork	R, P, DGC, RT
expanded mineral - particulate	2	shovel	shovel	R, I, W, P, DGC
foamed glass - particulate	2	shovel	shovel	R, W, P, DGC
LAND SPILL - MEDIUM				
expanded mineral -particulate	1	blower	skiploader	B. I. W. P. DGC
foamed glass, particulate	2	blower	skiploader	
Ioanieu giass- particulate	2	DIOWEI	Skipioauei	
foamed glass - particulate	3	throw	skiploader	R, W, P, DGC
 I: Not incinerable P: Effectiveness reduced when rai RT:Not effective where terrain is r. SS: Not for use within environmen W: Effectiveness reduced when wi Reference: Sorbents for Liquid Ha R.W Melvold et al: Pollution Techn Moderate hazard. Clear area of personnel and rr Alert Fire Brigade and tell ther Wear breathing apparatus plue Prevent, by any means availat Stop leak if safe to do so. Contain spill with sand, earth of Collect recoverable product in Neutralise/decontaminate resi Collect solid residues and sea sub wash area and prevent runoff After clean up operations, decomposition 	ny ugged tally s indy azardo ology nove u n loca s prot ble, sp or ver to lab due (s l in lai into c ontan	ensitive sit pus Substa Review No pwind. tition and na ective glove pillage from miculite. elled conta see Sectior belled drun frains. ninate and l	es nce Cleanup a b. 150: Noyes ature of hazaro es. entering drain iners for recyco 13 for specifi ns for disposal launder all proc	and Control; Data Corporation 1988 d. ns or water course. ling. c agent). tective clothing and equipment before storing and re-u

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	 Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture. Avoid contact with nicompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with scap and water after handling. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. DO NOT allow clothing wet with material to stay in contact with skin
	Avoid contact with incompatible materials
	had been a second the second sec
	When handling, DO NOT eat, drink or smoke.
Cofe handling	Keep containers securely sealed when not in use.
Safe handling	Avoid physical damage to containers
	 Always weak bands with each and water after bandling
	· Always wash hands with soap and water aner handling.
	Work clothes should be laundered separately. Launder contaminated clothing before re-use.
	• Use good occupational work practice.
	Observe manufacturer's storage and handling recommendations contained within this SDS.
	 A service management of a constraint of a service of a se
	Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
	DO NOT allow clothing wet with material to stay in contact with skin
Other information	Eollow instruction for use. The product should be supplied to or handled by deptal professionals. Do not get in eves, on skip or clothing

Conditions for safe storage, including any incompatibilities

Suitable container	 Store in a cool place at temperatures between 2-25°C away from direct light. DO NOT repack. Use containers supplied by manufacturer only.
Storage incompatibility	Avoid reaction with strong acids and oxidising agents.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	silver(I) fluoride	Silver, metal and soluble compounds (as Ag)	0.01 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	silver(I) fluoride	Fluorides (as F)	2.5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-2	silver(I) fluoride	Fluoride as dust	2.5 mg/m3	Not Available	Not Available	(Z37.28-1969)
US NIOSH Recommended Exposure Limits (RELs)	silver(I) fluoride	Silver (metal dust and soluble compounds, as Ag)	0.01 mg/m3	Not Available	Not Available	Not Available

Source	Ingredient	Material name		TWA	STEL		Peak	Notes
US ACGIH Threshold Limit Values (TLV)	silver(I) fluoride	Fluorides, as F	Fluorides, as F		Not A	vailable	Not Available	A4; BEI
US ACGIH Threshold Limit Values (TLV)	silver(I) fluoride	Silver, and compounds: Solu as Ag	0.01 mg/m3	Not A	vailable	Not Available	Not Available	
US ACGIH Threshold Limit Values (TLV)	silver(I) fluoride	Silver, and compounds: Meta	0.1 mg/m3	Not A	vailable	Not Available	Not Available	
US OSHA Permissible Exposure Limits (PELs) Table Z-1	nitric acid	Nitric acid		2 ppm / 5 mg/m3	Not A	vailable	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	nitric acid	Nitric acid		2 ppm / 5 mg/m3	10 mg ppm	/m3 / 4	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	nitric acid	Nitric acid		2 ppm	4 ppm	I	Not Available	Not Available
Emergency Limits								
Ingredient	TEEL-1		TEEL-2			TEEL-3		
nitric acid	Not Available		Not Available			Not Avail	able	

	Net Wallable	Notritaliable		Net / Wallable
Ingredient	Original IDLH		Revised IDLH	
silver(I) fluoride	10 mg/m3		Not Available	
nitric acid	25 ppm		Not Available	
water	Not Available		Not Available	

MATERIAL DATA

The adopted TLV-TWA for silver dust and fumes is 0.1 mg/m3 and for the more toxic soluble silver compounds the adopted value is 0.01 mg/m3. Cases of argyria (a slate to blue-grey discolouration of epithelial tissues) have been recorded when workers were exposed to silver nitrate at concentrations of 0.1 mg/m3 (as silver). Exposure to very high concentrations of silver fume has caused diffuse pulmonary fibrosis. Percutaneous absorption of silver compounds is reported to have resulted in allergy. Based on a 25% retention upon inhalation and a 10 m3/day respiratory volume, exposure to 0.1 mg/m3 (TWA) would result in total deposition of no more than 1.5 gms in 25 years.

Odour Threshold Value: 0.27 ppm (detection)

NOTE: Detector tubes for nitric acid, measuring in excess of 5 ppm, are commercially available.

The TLV-TWA is protective against corrosion of the skin, tissue and other membranes, against irritation to the eyes and mucous membranes, and against acute pulmonary oedema or chronic obstructive lung disease. It is not clear whether the TLV-TWA and STEL values will prevent potentiation of the toxicity of inhaled nitrogen dioxide.

Exposure controls			
	Engineering controls are used to remove a hazard or place a be highly effective in protecting workers and will typically be in The basic types of engineering controls are: Process controls which involve changing the way a job activit Enclosure and/or isolation of emission source which keeps a "adds" and "removes" air in the work environment. Ventilation ventilation system must match the particular process and che Employers may need to use multiple types of controls to prevent Local exhaust ventilation usually required. If risk of overexpore protection. Supplied-air type respirator may be required in sp An approved self contained breathing apparatus (SCBA) may Provide adequate ventilation in warehouse or closed storage velocities which, in turn, determine the "capture velocities" of	barrier between the worker and the hazard. Well-designed ndependent of worker interactions to provide this high level by or process is done to reduce the risk. selected hazard "physically" away from the worker and ven in can remove or dilute an air contaminant if designed proper emical or contaminant in use. rent employee overexposure. sure exists, wear approved respirator. Correct fit is essential ecial circumstances. Correct fit is essential to ensure adequ y be required in some situations. area. Air contaminants generated in the workplace possess fresh circulating air required to effectively remove the conta	engineering controls can of protection. tilation that strategically rly. The design of a I to obtain adequate late protection. s varying "escape" iminant.
	Type of Contaminant:		Air Speed:
	solvent, vapours, degreasing etc., evaporating from tank (i	0.25-0.5 m/s (50-100 f/min.)	
Appropriate engineering	aerosols, fumes from pouring operations, intermittent conta drift, plating acid fumes, pickling (released at low velocity in	0.5-1 m/s (100-200 f/min.)	
controls	direct spray, spray painting in shallow booths, drum filling, generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	
	grinding, abrasive blasting, tumbling, high speed wheel gen very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	
	Within each range the appropriate value depends on:		
	Lower end of the range	Upper end of the range	
	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	
	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity	
	3: Intermittent, low production.	3: High production, heavy use	
	4: Large hood or large air mass in motion 4: Small hood-local control only		
	Simple theory shows that air velocity falls rapidly with distance with the square of distance from the extraction point (in simpl accordingly, after reference to distance from the contaminatin 1-2 m/s (200-400 f/min) for extraction of solvents generated i producing performance deficits within the extraction apparatu more when extraction systems are installed or used.	e away from the opening of a simple extraction pipe. Veloci le cases). Therefore the air speed at the extraction point sho g source. The air velocity at the extraction fan, for example n a tank 2 meters distant from the extraction point. Other m is, make it essential that theoretical air velocities are multipl	ty generally decreases build be adjusted, , should be a minimum of echanical considerations, ied by factors of 10 or

Personal protection	
Eye and face protection	 Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	 Wear chemical protective gloves, e.g. PVC. Wear aftery fortwear or safety gumboosts, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dired thoroughly. Application of a non-perfumed motisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: frequency and duration of contact, chemical resistance of glove material. glove thickness and dextrity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, ASINZS 2161.1 or national equivalent). When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, ASINZS 2161.1.0 or national equivalent) is recommended. Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: Excellent when breakthrough time > 20 min Fair when breakthrough time > 20 min Fair when breakthrough time > 20 min
	moisturiser is recommended.
Body protection	See Other protection below
Other protection	 Overalls. P.V.C apron. Barrier cream. Skin cleansing cream. E ye wash unit.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	-AUS P2	-	-PAPR-AUS / Class 1 P2
up to 50 x ES	-	-AUS / Class 1 P2	-
up to 100 x ES	-	-2 P2	-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties Appearance Clear colourless liquid with no odour; mixes with water.

Physical state	Liquid	Relative density (Water= 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Applicable	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	 Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Inf	ormat	ion on	toxico	logica	l effects
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Inhaled	Limited evidence or practical experience suggests that the material may individuals, following inhalation. In contrast to most organs, the lung is at irritant and then repairing the damage. The repair process, which initially may however, produce further lung damage resulting in the impairment of irritation often results in an inflammatory response involving the recruiting system.	produce irritation of the respiratory system, in a significant number of ole to respond to a chemical insult by first removing or neutralising the evolved to protect mammalian lungs from foreign matter and antigens, of gas exchange, the primary function of the lungs. Respiratory tract ent and activation of many cell types, mainly derived from the vascular	
Ingestion	The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.		
Skin Contact	Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.		
Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.		
Chronic	Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.		
Riva Star Aqua (Riva Star Aqua Step 1 and Riva Star	TOXICITY	IRRITATION	
Step 2)	Not Available	Not Available	
	ΤΟΧΙΟΙΤΥ	IRRITATION	
silver(I) fluoride	Not Available	Not Available	
	тохісіту	IRRITATION	
nitric acid	Inhalation(Rat) LC50; 0.13 mg/L4h ^[2]	Eye: adverse effect observed (irritating) ^[1]	
		Skin: adverse effect observed (corrosive) ^[1]	

Continued...

	тохісіту	IRRITATION	
water	Oral(Rat) LD50; >90 mg/kg ^[2]	Not Available	
Legend:	Alue obtained from Europe ECHA Registered Subst specified data extracted from RTECS - Register of Toxic	tances - Acute toxicity 2.* Value obtain c Effect of chemical Substances	ned from manufacturer's SDS. Unless otherwise
NITRIC ACID	Oral (?) LD50: 50-500 mg/kg * [Various Manufacturers] The material may produce severe irritation to the eye ca produce conjunctivitis. The material may produce respiratory tract irritation. Syn breath, headache, nausea, and a burning sensation. Unlike most organs, the lung can respond to a chemical the damage (inflammation of the lungs may be a consect The repair process (which initially developed to protect to to the lungs (fibrosis for example) when activated by hat function of the lungs. Therefore prolonged exposure to to	ausing pronounced inflammation. Rep mptoms of pulmonary irritation may in l insult or a chemical agent, by first re quence). mammalian lungs from foreign matter zardous chemicals. Often, this results	eated or prolonged exposure to irritants may clude coughing, wheezing, laryngitis, shortness of moving or neutralising the irritant and then repairing and antigens) may, however, cause further damage i na nimpairment of gas exchange, the primary ued breathing difficulties.
	The material may produce severe skin irritation after pro form of dermatitis is often characterised by skin redness Histologically there may be intercellular oedema of the unlikely, given the severity of response, but repeated ex	blonged or repeated exposure, and m s (erythema) thickening of the epidern spongy layer (spongiosis) and intrace posures may produce severe ulcerati	ay produce a contact dermatitis (nonallergic). This nis. Illular oedema of the epidermis. Prolonged contact is on.
Riva Star Aqua (Riva Star Aqua Step 1 and Riva Star Step 2) & SILVER(I) FLUORIDE & NITRIC ACID	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production		
Riva Star Aqua (Riva Star Aqua Step 1 and Riva Star Step 2) & NITRIC ACID	for acid mists, aerosols, vapours Data from assays for genotoxic activity in vitro suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airways from direct exposure to inhaled acidic mists, just as mucous plays an important role in protecting the gastric epithelium from its auto-secreted hydrochloric acid. In considering whether pH itself induces genotoxic events in vivo in the respiratory system, comparison should be made with the human stomach, in which gastric juice may be at pH 1-2 under fasting or nocturnal conditions, and with the human urinary bladder, in which the pH of urine can range from <5 to > 7 and normally averages 6.2. Furthermore, exposures to low pH in vivo differ from exposures <i>in vitro</i> in that, <i>in vivo</i> , only a portion of the cell surface is subjected to the adverse conditions, so that perturbation of intracellular homeostasis may be maintained more readily than in vitro.		
SILVER(I) FLUORIDE & WATER	No significant acute toxicological data identified in literat	ture search.	
Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	×
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	x
		Legend: 🛛 🗶 – Data either no	t available or does not fill the criteria for classification

Legend: X – Data either not available or does not fill the criteria for classification - Data available to make classification

SECTION 12 Ecological information

oxicity					
Riva Star Aqua (Riva Star	Endpoint	Test Duration (hr)	Species	Value	Source
Aqua Step 1 and Riva Star Step 2)	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
silver(I) fluoride	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	16	Crustacea	0.276mg/L	4
nitric acid	LC50	96	Fish	0.186mg/L	4
	EC50	48	Crustacea	490mg/l	2
	Endpoint	Test Duration (hr)	Species	Value	Source
water	Not Available	Not Available	Not Available	Not Available	Not Available

Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite
-	V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment
	Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Ecotoxicity:

The tolerance of water organisms towards pH margin and variation is diverse. Recommended pH values for test species listed in OECD guidelines are between 6.0 and almost 9. Acute testing with fish showed 96h-LC50 at about pH 3.5

For silver and its compounds: Environmental fate:

Environmental fate:

Silver is a rare but naturally occurring metal, often found deposited as a mineral ore in association with other elements. Emissions from smelting operations, manufacture and disposal of certain photographic and electrical supplies, coal combustion, and cloud seeding are some of the anthropogenic sources of silver in the biosphere. The global biogeochemical movements of silver are characterized by releases to the atmosphere, water, and land by natural and anthropogenic sources, long-range transport of fine particles in the atmosphere, wet and dry deposition, and sorption to soils and sediments.

In general, accumulation of silver by terrestrial plants from soils is low, even if the soil is amended with silver-containing sewage sludge or the plants are grown on tailings from silver mines, where silver accumulates mainly in the root systems.

The ability to accumulate dissolved silver varies widely between species. Some reported bioconcentration factors for marine organisms (calculated as milligrams of silver per kilogram fresh weight organism divided by milligrams of silver per litre of medium) are 210 in diatoms, 240 in brown algae, 330 in mussels, 2300 in scallops, and 18 700 in oysters, whereas bioconcentration factors for freshwater organisms have been reported to range from negligible in bluegills (*Lepomis macrochirus*) to 60 in daphnids; these values represent uptake of bioavailable silver in laboratory experiments. Laboratory studies with the less toxic silver compounds, such as silver sulfide and silver choride, reveal that accumulation of silver of silver does not necessarily lead to adverse effects. At concentrations normally encountered in the environment, food-chain biomagnification of silver in aquatic systems is unlikely. Elevated silver concentrations in biota occur in the vicinities of sewage outfalls, electroplating plants, mine waste sites, and silver iodide-seeded areas. Maximum concentrations recorded in field collections, in milligrams total silver per kilogram dry weight (tissue), were 1.5 in marine mammals (liver) (except Alaskan beluga whales *Delphinapterus leucas*, which had concentrations 2 orders of magnitude higher than those of other marine mammals), 6 in fish (bone), 14 in plants (whole), 30 in annelid worms (whole), 44 in birds (liver), 110 in mushrooms (whole).

Ecotoxicity:

In general, silver ion was less toxic to freshwater aquatic organisms under conditions of low dissolved silver ion concentration and increasing water pH, hardness, sulfides, and dissolved and particulate organic loadings; under static test conditions, compared with flow-through regimens; and when animals were adequately nourished instead of being starved. Silver ions are very toxic to microorganisms. However, there is generally no strong inhibitory effect on microbial activity in sewage treatment plants because of reduced bioavailability due to rapid complexation and adsorption. Free silver ion was lethal to representative species of sensitive aquatic plants, invertebrates, and teleosts at nominal water concentrations as low as 0.17 ug/litre and on phytoplankton species composition and succession at 0.3-0.6 ug/litre.

A knowledge of the speciation of silver and its consequent bioavailability is crucial to understanding the potential risk of the metal. Measurement of free ionic silver is the only direct method that can be used to assess the likely effects of the metal on organisms. Speciation models can be used to assess the likely proportion of the total silver measured that is bioavailable to organisms. Unlike some other metals, background freshwater concentrations in pristine and most urban areas are well below concentrations causing toxic effects. Levels in most industrialized areas border on the effect concentration, assuming that conditions favour bioavailability. On the basis of available toxicity test results, it is unlikely that bioavailable free silver ions would ever be at sufficiently high concentrations to cause toxicity in marine environments.

No data were found on effects of silver on wild birds or mammals. Silver was harmful to poultry (tested as silver nitrate) at concentrations as low as 100 mg total silver/litre in drinking-water or 200 mg total silver/kg in diets. Sensitive laboratory mammals were adversely affected at total silver concentrations (added as silver nitrate) as low as 250 ug/litre in drinking-water (brain histopathology), 6 mg/kg in diet (high accumulations in kidneys and liver), or 13.9 mg/kg body weight (lethality).

Silver and Silver Compounds; Concise International Chemical Assessment Document (CICAD) 44 IPCS InChem (WHO)

The transport of silver through estuarine and coastal marine systems is dependent on biological uptake and incorporation. Uptake by phytoplankton is rapid, in proportion to silver concentration and inversely proportional to salinity. In contrast to studies performed with other toxic metals, sliver availability appears to be controlled by both the free silver ion concentration and the concentration of other silver complexes. Silver incorporated by phytoplankton is not lost as salinity increase; as a result silver associated with cellular material is largely retained within the estuary. Phytoplankton exhibit a variable sensitivity to silver. Sensitive species exhibit a marked delay in the onset of growth in response to silver at low concentrations, even though maximum growth rates are similar to controls. A delay in the onset of growth reduces the ability of a population to respond to short-term favourable conditions and to succeed within th community.

James G. Saunders and George R Abbe: Aquatic Toxicology and Environmental Fate; ASTM STP 1007, 1989, pp 5-18

Although small amounts of fluorides are conceded to have beneficial effects, two forms of chronic toxic effect, dental fluorosis and skeletal fluorosis may be caused by excessive intake over long periods. Fluorides are absorbed by humans following inhalation of workplace and ambient air that has been contaminated, ingestion of drinking water and foods and dermal contact.

Fluoride accumulates, food-dependently in skeletal tissues of both aquatic and terrestrial vertebrates and invertebrates. Bioaccumulation occurs in marine organisms and, to a lesser extend, fresh water organisms. Reported BCF-values for marine organisms range up to approximately 150 and 60 for fish and crustacea, respectively. The most important exposure route for plants is uptake from the atmosphere. Concentrations in plants in the vicinity of a HF production plant range up to approximately 200 mg/kg, with mean levels between 20 and 50 mg/kg dry weight. Generally, lowest fluoride levels are found in herbivores and (somewhat) higher levels in predators. Fluorides have been shown to accumulate in animals that consume fluoride-containing foliage However, accumulation is primarily in skeletal tissue and therefore, it is unlikely that fluoride will biomagnify up the food chain.

Both hydrogen fluoride and particulate fluorides will be transported in the atmosphere and deposited on land or water by wet and dry deposition. Non-volatile inorganic fluoride particulates are removed from the atmosphere via condensation or nucleation processes. Fluorides adsorbed on particulate matter in the atmosphere are generally stable and are not readily hydrolysed, although they may be degraded by radiation if they persist in the atmosphere. Fluorine and the silicon fluorides (fluosilicates, silicofluorides) are hydrolysed in the atmosphere to form hydrogen fluoride. Hydrogen fluoride may combine with water vapour to produce an aerosol or fog of aqueous hydrofluoric acid. Based upon available data, inorganic fluoride compounds, with the exception of sulfur hexafluoride, are not expected to remain in the troposphere for long periods or to migrate to the stratosphere. Estimates of the residence time of sulfur hexafluoride in the atmosphere range from 500 to several thousand years. Fluoride in aerosols can be transported over large distances by wind or as a result of atmospheric fluorides may be transported is determined by the deposition velocity of both the gaseous hydrogen fluoride and the fluorides in particulate form. Atmospheric fluorides may be transported to soils and surface waters through both wet and dry deposition processes.

Fluorides undergo transformations in soil and water, forming complexes and binding strongly to soil and sediment.

In water, the transport and transformation of inorganic fluorides are influenced by pH, water hardness and the presence of ion-exchange materials such as clays. In natural water, fluoride forms strong complexes with aluminum in water, and fluorine chemistry in water is largely regulated by aluminum concentration and pH. Below pH 5, fluoride is almost entirely complexed with aluminum and consequently, the concentration of free F- is low. As the pH increases, AI-OH complexes dominate over AI-F complexes and the free F- levels increase. Fluoride forms stable complexes with calcium and magnesium, which are present in sea water. Calcium carbonate precipitation dominates the removal of dissolved fluoride from sea water. The residence time for fluoride in ocean sediment is calculated to be 2-3 million years. Fluorosilicic acid and hydrofluoric acid in high aquatic concentrations such as may be found in industrial waste ponds may volatilise, releasing silicon tetrafluoride and hydrogen fluoride into the atmosphere.

Solubilisation of inorganic fluorides from minerals may also be enhanced by the presence of ion-exchange materials (e.g., bentonite clays and humic acid). Once dissolved, inorganic fluorides remain in solution under conditions of low pH and hardness and in the presence of ion-exchange material. Soluble inorganic fluorides may also form aerosols at the air?water interface or vaporise into the atmosphere whereas undissolved species generally undergo sedimentation.

Factors that influence the mobility of inorganic fluorides in soil are pH and the formation of aluminium and calcium complexes In more acidic soils, concentrations of inorganic fluoride were considerably higher in the deeper horizons. The low affinity of fluorides for organic material results in leaching from the more acidic surface horizon and increased retention by clay minerals and silts in the more alkaline, deeper horizons. The maximum adsorption of fluoride to soil was reported to occur at pH 5.5. In acidic soils with pH below 6, most of the fluoride is in complexes with either aluminium or iron. Fluoride in alkaline soils at pH 6.5 and above is almost completely fixed in soils as calcium fluoride, if sufficient calcium carbonate is available. Fluoride is extremely immobile in soil, as determined by lysimeter experiments.

Populations living in areas with high fluoride levels in groundwater may be exposed to higher levels of fluorides in their drinking water or in beverages prepared with the water. Among these populations, outdoor laborers, people living in hot climates, and people with polydipsia will generally have the greatest daily intake of fluorides because they consume greater amounts of water.

Foods characteristically high in fluoride content are certain types of fish and seafood (1.9-28.5 mg/kg), especially those types in which the bones are consumed, bone products such as bone meal and gelatin, and tea, which contains approximately 0.52 mg fluoride/cup

Fluoride is mainly absorbed by the body in the form of hydrogen fluoride, which has a pKa of 3.45. That is, when ionic fluoride enters the acidic environment of the stomach lumen, it is largely converted into hydrogen fluoride. Most of the fluoride that is not absorbed from the stomach will be rapidly absorbed from the small intestine. DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air	
water	LOW	LOW	
Bioaccumulative potential			
Ingredient	Bioaccumulation		
water	LOW (LogKOW = -1.38)		
Mobility in soil			

Ingredient Mobility water LOW (KOC = 14.3)

SECTION 13 Disposal considerations

Waste treatment methods	
Product / Packaging disposal	 DO NOTallow wash water from cleaning or process equipment to enter drains. It may be necessary to collect all wash water for treatment before disposal. In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. Where in doubt contact the responsible authority. Consult State Land Waste Management Authority for disposal. Bury residue in an authorised landfill.

SECTION 14 Transport information

Labels Required

Marine Pollutant Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
silver(I) fluoride	Not Available
nitric acid	Not Available
water	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
silver(I) fluoride	Not Available
nitric acid	Not Available
water	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

silver(I) fluoride is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
US ACGIH Threshold Limit Values (TLV)

- US ACGIH Threshold Limit Values (TLV) Carcinogens
- US AIHA Workplace Environmental Exposure Levels (WEELs)
- US CWA (Clean Water Act) Priority Pollutants
- US CWA (Clean Water Act) Toxic Pollutants

nitric acid is found on the following regulatory lists

- US ACGIH Threshold Limit Values (TLV)
- US AIHA Workplace Environmental Exposure Levels (WEELs)
- US CWA (Clean Water Act) List of Hazardous Substances
- US Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism
- Standards (CFATS) Chemicals of Interest
- US DOE Temporary Emergency Exposure Limits (TEELs)
- US EPCRA Section 313 Chemical List

- US EPA Integrated Risk Information System (IRIS)
- US EPCRA Section 313 Chemical List
- US NIOSH Recommended Exposure Limits (RELs)
- US OSHA Permissible Exposure Limits (PELs) Table Z-1
- US OSHA Permissible Exposure Limits (PELs) Table Z-2
- US Toxic Substances Control Act (TSCA) Chemical Substance Inventory
- US NIOSH Recommended Exposure Limits (RELs)
- US OSHA Permissible Exposure Limits (PELs) Table Z-1
- US SARA Section 302 Extremely Hazardous Substances
- US Toxic Substances Control Act (TSCA) Chemical Substance Inventory
- US TSCA Chemical Substance Inventory Interim List of Active Substances

l	water is found on the following regulatory lists
	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

US TSCA Chemical Substance Inventory - Interim List of Active Substances

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

ļ	Section 311/312 hazard categories	
	Flammable (Gases, Aerosols, Liquids, or Solids)	No
	Gas under pressure	No
	Explosive	No
	Self-heating	No
	Pyrophoric (Liquid or Solid)	No
	Pyrophoric Gas	No
	Corrosive to metal	No
	Oxidizer (Liquid, Solid or Gas)	No
	Organic Peroxide	No
	Self-reactive	No
	In contact with water emits flammable gas	No
	Combustible Dust	No
	Carcinogenicity	No
	Acute toxicity (any route of exposure)	No
	Reproductive toxicity	No
	Skin Corrosion or Irritation	Yes
	Respiratory or Skin Sensitization	No
	Serious eye damage or eye irritation	Yes
	Specific target organ toxicity (single or repeated exposure)	No
	Aspiration Hazard	No
	Germ cell mutagenicity	No
	Simple Asphyxiant	No
	Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

Name	Reportable Quantity in Pounds (Ib)	Reportable Quantity in kg
nitric acid	1000	454

State Regulations

US. California Proposition 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (silver(I) fluoride)
Canada - NDSL	No (nitric acid; water)
China - IECSC	No (silver(I) fluoride)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	No (silver(I) fluoride)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (silver(I) fluoride)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 Other information

Revision Date	15/09/2020
Initial Date	07/05/2020

SDS Version Summary

Version	Issue Date	Sections Updated
0.4.1.1.1	14/09/2020	Ingredients, Name

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by SDI Limited using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average PC-STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit. IDLH: Immediately Dangerous to Life or Health Concentrations ES: Exposure Standard OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index AIIC: Australian Inventory of Industrial Chemicals DSL: Domestic Substances List NDSL: Non-Domestic Substances List IECSC: Inventory of Existing Chemical Substance in China EINECS: European INventory of Existing Commercial chemical Substances ELINCS: European List of Notified Chemical Substances NLP: No-Longer Polymers ENCS: Existing and New Chemical Substances Inventory KECI: Korea Existing Chemicals Inventory NZIoC: New Zealand Inventory of Chemicals PICCS: Philippine Inventory of Chemicals and Chemical Substances TSCA: Toxic Substances Control Act TCSI: Taiwan Chemical Substance Inventory INSQ: Inventario Nacional de Sustancias Químicas NCI: National Chemical Inventory FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

The information contained in the Safety Data Sheet is based on data considered to be accurate, however, no warranty is expressed or implied regarding the accuracy of the data or the results to be obtained from the use thereof.

Other information:

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