

Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules

SDI Limited

Version No: 9.1
Safety data sheet according to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758

Issue Date: **10/03/2023** Print Date: **18/12/2023** L.REACH.GB.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

1.1. Product Identifier

Product name	Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	MERCURY CONTAINED IN MANUFACTURED ARTICLES
Chemical formula	Not Applicable
Other means of identification	Not Available

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	For filling of cavitated teeth by dental professionals.
Uses advised against	No specific uses advised against are identified.

1.3. Details of the manufacturer or supplier of the safety data sheet

Registered company name	SDI Limited	SDI (North America) Inc.	SDI Germany GmbH		
Address	3-15 Brunsdon Street Bayswater VIC 3153 Australia	1279 Hamilton Parkway Itasca IL 60143 United States	Hansestrasse 85 Cologne D-51149 Germany		
Telephone	+61 3 8727 7111	+61 3 8727 7111 +1 630 361 9200 +49 0 2203 9255 0			
Fax	+61 3 8727 7222	61 3 8727 7222 Not Available +49 0 2203 9255 200			
Website	www.sdi.com.au	www.sdi.com.au	www.sdi.com.au		
Email	info@sdi.com.au	germany@sdi.com.au			
Registered company name	SDI HOLDINGS PTY LTD DO				
Address	Rua Dr. Reinaldo Schmithausen 3141 – Cordeiros Itajaí – SC – CEP 88310-004 Brazil				
Telephone	+55 11 3092 7100				
Fax	Not Available				

1.4. Emergency telephone number

Website

Email

Association / Organisation	SDI Limited	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	131126 Poisons Information Centre	+44 20 3901 3542
Other emergency telephone numbers	+61 3 8727 7111	+44 808 164 9592

Once connected and if the message is not in your preferred language then please dial 01

http://www.sdi.com.au/

Brasil@sdi.com.au

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567 [1]	H290 - Corrosive to Metals Category 1, H319 - Serious Eye Damage/Eye Irritation Category 2, H330 - Acute Toxicity (Inhalation) Category 2, H360D - Reproductive Toxicity Category 1B, H372 - Specific Target Organ Toxicity - Repeated Exposure Category 1, H400 - Hazardous to the Aquatic Environment Acute Hazard Category 1, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1
Legend:	1. Classification by vendor; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567

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Hazard pictogram(s)









Sig	nal	wο	rd
Oig	iiai	****	

Danger

Hazard statement(s)

H290	May be corrosive to metals.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H360D	May damage the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

1 reductionary statement(s) i re	overmon
P201	Obtain special instructions before use.
P260	Do not breathe dust/fume.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P234	Keep only in original packaging.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P284	[In case of inadequate ventilation] wear respiratory protection.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.			
P308+P313	xposed or concerned: Get medical advice/ attention.			
P310	Immediately call a POISON CENTER/doctor/physician/first aider.			
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.			
P337+P313	If eye irritation persists: Get medical advice/attention.			
P390	Absorb spillage to prevent material damage.			
P391	Collect spillage.			

Precautionary statement(s) Storage

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

Precautionary statement(s) Disposal

P501 Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

2.3. Other hazards

Cumulative effects may result following exposure*.

May produce discomfort of the respiratory system and $\mbox{skin}^{\star}.$

mercury (elemental) Listed in the Europe Regulation (EC) No 1907/2006 - Annex XVII (Restrictions may apply)

SECTION 3 Composition / information on ingredients

3.1.Substances

See 'Composition on ingredients' in Section 3.2

3.2.Mixtures

1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
Not Available		capsules	Not Applicable	Not Applicable	Not Available

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1. CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classified according to GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567	SCL / M-Factor	Nanoform Particle Characteristics
1. 7439-97-6 2.231-106-7 3.080-001-00-0 4.01-2119548380-42- XXXX 01-2120767624-46-XXXX	40-50	mercury (elemental).*	Acute Toxicity (Inhalation) Category 2, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 1, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H330, H360D, H372, H400, H410 [2]	Not Available	Not Available
Legend:	d: 1. Classification by vendor; 2. Classification drawn from GB-CLP Regulation, UK SI 2019/720 and UK SI 2020/1567; 3. Classification drawn from C&L * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties				

SECTION 4 First aid measures

4.1 Description of first aid measures

2000p		
	If this product co	

Eve Contact

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- ► Transport to hospital or doctor without delay.
- ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.
- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.

Inhalation

- Transport to hospital, or doctor, without delay.
- Inhalation of vapours or aerosols (mists, fumes) may cause lung oedema.
- Corrosive substances may cause lung damage (e.g. lung oedema, fluid in the lungs).
- As this reaction may be delayed up to 24 hours after exposure, affected individuals need complete rest (preferably in semi-recumbent posture) and must be kept under medical observation even if no symptoms are (yet) manifested.
- Before any such manifestation, the administration of a spray containing a dexamethasone derivative or beclomethasone derivative may be considered.

This must definitely be left to a doctor or person authorised by him/her.

(ICSC13719)

Ingestion

Seek medical attention.

Rinse mouth with water. Drink large quantities of water (if conscious)

4.2 Most important symptoms and effects, both acute and delayed

See Section 11

4.3. Indication of any immediate medical attention and special treatment needed

- Moderate adsorption of inorganic mercury compounds through the gastro-intestinal tract (7-15%) is the principal cause of poisoning. These compounds are highly concentrated (as the mercuric (Hg (2+) form) in the kidney; acute ingestion may lead to oliguric renal failure. Severe mucosal necrosis may also result from ingestion.
- Chronic effects range from proteinuria to nephrotic syndrome. Chronic presentation also involves dermatitis, gingivitis, stomatitis, tremor and neuropsychiatric symptoms of erethism.
- ▶ Absorbed inorganic mercury does not significantly cross the blood-brain barrier.
- Emesis and lavage should be initiated following acute ingestion.
- Activated charcoal interrupts absorption; cathartics should be administered when charcoal is given.
- The use of British Anti-Lewisite is indicated in severe inorganic poisoning. Newer derivatives of BAL (e.g. dimercaptosuccinic acid, [DMSA] and 2,3-dimercapto-1-propanesulfate [DMPS]) may prove more effective. [Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

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

 Determinant
 Index
 Sampling Time
 Comments

 1. Total inorganic mercury in urine
 35 ug/gm creatinine
 Preshift
 B

 2. Total inorganic mercury in blood
 15 ug/L
 End of shift at end of workweek
 B

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

for corrosives:

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 l/min.
- ► Monitor and treat, where necessary, for pulmonary oedema .
- Monitor and treat, where necessary, for pulmor
 Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- ▶ Where eyes have been exposed, flush immediately with water and continue to irrigate with normal saline during transport to hospital.
- DO NOT use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.
- Skin burns should be covered with dry, sterile bandages, following decontamination.
- DO NOT attempt neutralisation as exothermic reaction may occur.

ADVANCED TREATMENT

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- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use
- Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

EMERGENCY DEPARTMENT

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- Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and magnesium, may assist in establishing a treatment regime.
- Positive end-expiratory pressure (PEEP)-assisted ventilation may be required for acute parenchymal injury or adult respiratory distress syndrome.
- Consider endoscopy to evaluate oral injury.
- Consult a toxicologist as necessary

BRONSTEIN, A.C. and CURRANCE, P.L. EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 Firefighting measures

5.1. Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.
- ► BCF (where regulations permit).
- Carbon dioxide.

5.2. Special hazards arising from the substrate or mixture

Fire Incompatibility	ity Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result			
5.3. Advice for firefighters				
Fire Fighting	 Alert Fire Brigade and tell them location and nature of hazard. Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. 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. Slight hazard when exposed to heat, flame and oxidisers. 			
Fire/Explosion Hazard	Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. Articles and manufactured articles may constitute a fire hazard where polymers form their outer layers or where combustible packaging remains in place. Certain substances, found throughout their construction, may degrade or become volatile when heated to high temperatures. This may create a secondary hazard. May emit corrosive fumes. May emit poisonous fumes.			

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

Minor Spills	 Use suction bottle to collect small amounts of mercury. Calcium polysulfide with excess sulfur can be sprinkled into cracks or other inaccessible places to convert mercury globules into the sulfide. Collect solid residues and place in tightly sealed, clean, dry containers Clean up all spills immediately. Secure load if safe to do so. Bundle/collect recoverable product. Collect remaining material in containers with covers for disposal.
Major Spills	Avoid all personal contact and wear full protective equipment Environmental hazard: contain spillage. Stop leak if safe to do so Clean up bulk mercury spillage by mechanical means, suck up where practicable. Calcium polysulfide with excess sulfur can be sprinkled into cracks or other inaccessible places to convert mercury globules into the sulfide. (Proprietary products are available for this purpose) Collect solid residues and place in clean, dry, sealable plastic drums. Ensure that all residues are cleaned up. Do NOT wash spill area after clean up. Vacuum up residues.

6.4. Reference to other sections

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

SECTION 7 Handling and storage

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7.1. Precautions for safe handling

7.1. Flecautions for sale nationing			
Safe handling	 Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Avoid contact with moisture. Avoid contact with incompatible 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 soap 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. 		
Fire and explosion protection	See section 5		
Other information	Store below 25 deg. C. Store in a dry and well ventilated-area, away from heat and sunlight.		

7.2. Conditions for safe storage, including any incompatibilities

Suitable container	DO NOT repack. Use containers supplied by manufacturer only.	
Storage incompatibility	Avoid reaction with oxidising agents	
Hazard categories in accordance with Regulation (EC) No 1272/2008	H2: Acute Toxic, E1: Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1	
Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of	H2 Lower- / Upper-tier requirements: 50 / 200 E1 Lower- / Upper-tier requirements: 100 / 200	

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

Ingredient	DNELs Exposure Pattern Worker	PNECs Compartment
mercury (elemental)	Inhalation 0.02 mg/m³ (Systemic, Chronic) Inhalation 0.004 mg/m³ (Systemic, Chronic) * Oral 7.39 µg/kg bw/day (Systemic, Chronic) *	0.057 µg/L (Water (Fresh)) 0.067 µg/L (Water (Marine)) 9.3 mg/kg sediment dw (Sediment (Fresh Water)) 9.3 mg/kg sediment dw (Sediment (Marine)) 22 µg/kg soil dw (Soil) 2.25 µg/L (STP)

^{*} Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
UK Workplace Exposure Limits (WELs).	mercury (elemental)	Mercury and divalent inorganic compounds including mercuric oxide and mercuric chloride (measured as mercury)	0.02 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2		TEEL-3
mercury (elemental)	0.15 mg/m3	Not Available		Not Available
Ingredient	Original IDLH		Revised IDLH	
mercury (elemental)	10 mg/m3		Not Available	

MATERIAL DATA

8.2. Exposure controls

	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:
	Process controls which involve changing the way a job activity or process is done to reduce the risk.
	Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically
8.2.1. Appropriate engineering	"adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a
	ventilation system must match the particular process and chemical or contaminant in use.
controls	Employers may need to use multiple types of controls to prevent employee overexposure

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations.

Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape"

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velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant: Air Speed: 0.25-0.5 m/s solvent, vapours, degreasing etc., evaporating from tank (in still air). (50-100 f/min.) aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray 0.5-1 m/s (100-200 drift, plating acid fumes, pickling (released at low velocity into zone of active generation) f/min.) direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active 1-2.5 m/s (200-500 generation into zone of rapid air motion) f/min.) grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of 2.5-10 m/s (500-2000 f/min.) very high rapid air motion).

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 away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Articles or manufactured items, in their original condition, generally don't require engineering controls during handling or in normal use. Exceptions may arise following extensive use and subsequent wear, during recycling or disposal operations where substances, found in the article, may be released to the environment.

8.2.2. Individual protection measures, such as personal protective equipment









Eve and face protection

Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]

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].

Skin protection	See Hand protection below		
Hands/feet protection	Wear impervious gloves.		
Body protection	See Other protection below		
	Overalls. PVC Apron.		

Other protection

- - ▶ PVC protective suit may be required if exposure severe
 - Eyewash unit.
 - Ensure there is ready access to a safety shower

Respiratory protection

Type HG-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, 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	HG-AUS P2	-	HG-PAPR-AUS / Class 1 P2
up to 50 x ES	-	HG-AUS / Class 1 P2	-
up to 100 x ES	-	HG-2 P2	HG-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)

Respiratory protection not normally required due to the physical form of the product.

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

Silver alloy powder and mercury in separate compartments of a plastic capsule. Grey fine metallic powder (Silver alloy) and silver-white heavy liquid metal (Mercury) with no odour, insoluble in water.

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Physical state	Manufactured	Relative density (Water = 1)	13.6 (Mercury)
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	356.6 (Mercury)	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	-38.9 (Mercury)	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 Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Applicable
Vapour pressure (kPa)	0 @ 20 deg C (Mercury)	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	-6.9 (Mercury)	VOC g/L	Not Available
Nanoform Solubility	Not Available	Nanoform Particle Characteristics	Not Available
Particle Size	Not Available		

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

10.1.Reactivity	See section 7.2
10.2. Chemical stability	Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.
10.3. Possibility of hazardous reactions	See section 7.2
10.4. Conditions to avoid	See section 7.2
10.5. Incompatible materials	See section 7.2
10.6. Hazardous decomposition products	See section 5.3

SECTION 11 Toxicological information

Inhaled	Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation. Inhalation of aerosols (mists, furnes), generated by the material during the course of normal handling, may produce severely toxic effects. Relatively small amounts absorbed from the lungs may prove fatal. Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Following ingestion of mercury compounds, symptoms may appear within the first few minutes and may include pain, profuse vomiting and severe purging; the victim may die within a few hours from peripheral vascular collapse secondary to fluid and electrolyte loss. Primary gastroenteritis may subside spontaneously within a few days but severe haemorrhagic inflammation of the colon (colitis) has occurred as late as 9 days following ingestion. A second phase developing over 1-3 days is characterised by stomatitis (lesions of the mouth parts), membranous colitis and kidney damage (tubular nephritis). This second phase is associated with a slow and prolonged excretion of mercury by salivary glands the gastrointestinal mucosa and kidneys. Death in this phase usually occurs as a result of kidney failure. The alimentary effects of many mercury compounds are so rapid that the course and outlook is largely determined by events within the first 5-10 minutes. Acute systemic "mercurialism" may be lethal within a few minutes or death may be delayed for 5-12 days. The ionisable salts are corrosive and tissue damage occurs almost immediately in the mouth, throat and oesophagus.
Skin Contact	Limited 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

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Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules

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. Irritation and skin reactions are possible with sensitive skin 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. Eve 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. Toxic: danger of serious damage to health by prolonged exposure through inhalation. Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests. There is sufficient evidence to provide a strong presumption that human exposure to the material may result in developmental toxicity, generally on the basis of Chronic - clear results in appropriate animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; TOXICITY IRRITATION Ultracaps Plus; Ultracaps S; Not Available Not Available SDI Admix; SDI Spherical; **New Ultrafine - Capsules** TOXICITY IRRITATION Inhalation(Rat) LC50: >0.007 mg/L4h^[1] Not Available mercury (elemental)

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

MERCURY (ELEMENTAL)

Animal studies have shown that mercury may be a reproductive effector.

Oral (Rat) LD50: >2000 mg/kg[1]

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. 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. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

Acute Toxicity	✓	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	✓
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	✓
Mutagenicity	×	Aspiration Hazard	×

Legend:

X - Data either not available or does not fill the criteria for classification

– Data available to make classification

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

Permite; Lojic Plus; GS-80; GS-80 Spherical; F400;	Endpoint	Test Duration (hr)	Species	Value	Source
Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules	Not Available	Not Available	Not Available	Not Available	Not Available
	Endpoint	Test Duration (hr)	Species	Value	Source

mercury (elemental)

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	0.034mg/L	4
EC50	48h	Crustacea	<0.001mg/L	2
EC50	96h	Algae or other aquatic plants	0.002-0.034mg/l	4

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Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules

	LC50	96h	Fish	0.002-0.006mg/l	4
	NOEC(ECx)	48h	Algae or other aquatic plants	0.00001mg/l	4
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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				

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. DO NOT discharge into sewer or waterways

12.2. Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air	
	No Data available for all ingredients	No Data available for all ingredients	

12.3. Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

12.4. Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

12.5. Results of PBT and vPvB assessment

	P	В	Т	
Relevant available data	Not Available	Not Available	Not Available	
PBT	X	×	×	
vPvB	×	×	×	
PBT Criteria fulfilled?				
vPvB			No	

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

12.7. Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

SECTION 13 Disposal considerations

13.1. Waste treatment methods

The 1991 Environmental Protection (Duty of Care) Regulations SI No. 2839 and amendments should be noted (United Kingdom). Consult State Land Waste Management Authority for disposal.

Recycle wherever possible.

Product / Packaging disposal

- ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Treat and neutralise at an approved treatment plant. Treatment should involve: Mixing or slurrying in water; Neutralisation followed by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material)
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Waste treatment options Not Available Sewage disposal options Not Available

SECTION 14 Transport information

Labels Required





Marine Pollutant



HAZCHEM 2X

Land transport (ADR-RID)

14.1. UN number or ID	3506
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Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules

number				
14.2. UN proper shipping name	MERCURY CONTAINED IN MAN	UFACTURED ARTIC	LES	
14.3. Transport hazard class(es)	Class 8 Subsidiary Hazard 6.1			
14.4. Packing group	Not Applicable			
14.5. Environmental hazard	Environmentally hazardous			
	Hazard identification (Kemler) Classification code	Not Applicable		
14.6. Special precautions for	Hazard Label	8 +6.1		
user	Special provisions	366		
	Limited quantity	5 kg		
	Tunnel Restriction Code	E		

Air transport (ICAO-IATA / DGR)

til transport (ICAO-IATA / DON	·			
14.1. UN number	3506			
14.2. UN proper shipping name	Mercury contained in manufactured articles			
	ICAO/IATA Class 8			
14.3. Transport hazard class(es)	ICAO / IATA Subsidiary Hazard 6.1			
ciass(es)	ERG Code 8L			
14.4. Packing group	Not Applicable			
14.5. Environmental hazard	Environmentally hazardous			
	Special provisions		A48 A69 A191	
	Cargo Only Packing Instructions		869	
	Cargo Only Maximum Qty / Pack		No Limit	
14.6. Special precautions for user	Passenger and Cargo Packing Instructions		869	
	Passenger and Cargo Maximum Qty / Pack		No Limit	
	Passenger and Cargo Limited Quantity Packing Instructions		Forbidden	
	Passenger and Cargo Limited Ma	ximum Qty / Pack	Forbidden	

Sea transport (IMDG-Code / GGVSee)

*** ** *** *** *** *** *** *** *** ***			
14.1. UN number	3506		
14.2. UN proper shipping name	MERCURY CONTAINED IN MANUFACTURED ARTICLES		
14.3. Transport hazard class(es)	IMDG Class 8 IMDG Subsidiary Hazard 6.1		
14.4. Packing group	Not Applicable		
14.5 Environmental hazard	Marine Pollutant		
14.6. Special precautions for user	EMS Number F-A , S-B Special provisions 366 Limited Quantities 5 kg		

Inland waterways transport (ADN)

mana mater mayo manoport (meny			
14.1. UN number	3506		
14.2. UN proper shipping name	MERCURY CONTAINED IN MANUFACTURED ARTICLES		
14.3. Transport hazard class(es)	8 6.1		
14.4. Packing group	Not Applicable		
14.5. Environmental hazard	Environmentally hazardous		
14.6. Special precautions for user	Classification code	СТ3	
	Special provisions	366	
	Limited quantity	5kg	
	Equipment required	PP, EP, TOX, A	
	Fire cones number	0	

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Permite: Loiic Plus: GS-80: GS-80 Spherical: E400: Ultracaps Plus: Ultracaps S: SDI Admiy: SDI

Print Date: 18/12/2023

Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules

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

Not Applicable

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

Product name	Group
mercury (elemental)	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
mercury (elemental)	Not Available

UN 3506 - Special Provision 366:

For land and sea transport, manufactured instruments and articles containing not more than 1 kg of mercury are not subject to this Code. For air transport, articles containing not more than 15 g of mercury are not subject to this Code.

SECTION 15 Regulatory information

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

mercury (elemental) is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

Great Britain GB mandatory classification and labelling list (GB MCL)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

UK Workplace Exposure Limits (WELs).

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

Seveso Category	H2, E1		
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15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

National Inventory Status

National Inventory	Status	
Australia - AIIC / Australia Non-Industrial Use	Yes	
Canada - DSL	Yes	
Canada - NDSL	No (mercury (elemental))	
China - IECSC	Yes	
Europe - EINEC / ELINCS / NLP	Yes	
Japan - ENCS	No (mercury (elemental))	
Korea - KECI	Yes	
New Zealand - NZIoC	Yes	
Philippines - PICCS	Yes	
USA - TSCA	Yes	
Taiwan - TCSI	Yes	
Mexico - INSQ	Yes	
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. These ingredients may be exempt or will require registration.	

SECTION 16 Other information

Revision Date	10/03/2023
Initial Date	02/11/2015

Full text Risk and Hazard codes

H400	Very toxic to aquatic life.

SDS Version Summary

Version	Date of Update	Sections Updated
8.1	10/12/2021	Classification change due to full database hazard calculation/update.

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Permite; Lojic Plus; GS-80; GS-80 Spherical; F400; Ultracaps Plus; Ultracaps S; SDI Admix; SDI Spherical; New Ultrafine - Capsules

Version	Date of Update	Sections Updated
9.1	10/03/2023	Classification change due to full database hazard calculation/update.

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.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

EN 166 Personal eye-protection

EN 340 Protective clothing

EN 374 Protective gloves against chemicals and micro-organisms

EN 13832 Footwear protecting against chemicals

EN 133 Respiratory protective devices

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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- ▶ 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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