

# Permite; Lojic +; GS-80, GS-80 Spherical; F400; Ultracaps +; Ultracaps S; SDI Admix; SDI Spherical and New Ultrafine- Capsules

SDI Limited

Version No: 5.1.1.1 Safety Data Sheet (Conforms to Regulations (EC) No 2015/830)

Issue Date: 12/01/2016 Print Date: 23/03/2016 Initial Date: Not Available
L.REACH.GBR.EN

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product name	Permito: Loilo +: CS 90 CS 90 Sahedard 5100		the second section of the second
Synonyms	Not Available	Ultracaps +; Ultracaps S; SDI Admix; SDI Spherical	and New Ultrafine- Capsules
The state of the second			
Proper shipping name Other means of identification	MERCURY CONTAINED IN MANUFACTURED  Not Available	ARTICLES	
	I	A ST TOTAL SEA COMMING IN	era era un marcona de la promoció
- 4 - 444 000 000 000 000 000	es of the substance or mixture and use		
Relevant identified uses	For filling of cavitated teeth by dental professionals	S.	
Uses advised against	Not Applicable		7 TO THE STATE OF SEC. 10 AND 10 AND 10
3. Details of the supplier	of the safety data sheet		
Registered company name	SDI Limited	SDI Brazil Industria E Comercio Ltda	SDI Germany GmbH
Address	3-15 Brunsdon Street VIC Bayswater 3153 Australia	Rua Dr. Virgilio de Carvalho Pinto, 612 São Paulo CEP 05415-020 Brazil	Hansestrasse 85 Cologne D-51149 Germany
Telephone	+61 3 8727 7111 (Business Hours)	+55 11 3092 7100	+49 0 2203 9255 0
Fax	+61 3 8727 7222	+55 11 3092 7101	+49 0 2203 9255 200
Website	www.sdi.com.au	www.sdi.com.au	www.sdi.com.au
Email	info@sdi.com.au	brasil@sdi.com.au	germany@sdi.com.au
Registered company name	SDI (North America) Inc.		
Address	1279 Hamilton Parkway IL Itasca 60143 United Stat	les	****
Telephone	+1 630 361 9200 (Business hours)		
Fax	Not Available		The second of a contract of
Website	Not Available	E - 1 10 000 1	
Email	USA.Canada@sdi.com.au		
•			
4. Emergency telephone	1.5		
Association / Organisation	SDI Limited	Not Available	Not Available
Emergency telephone numbers	+61 3 8727 7111	Not Available	Not Available
Other emergency telephone numbers	ray.cahill@sdi.com.au	Not Available	Not Available
Association / Organisation	Not Available		
Emergency telephone numbers	+61 3 8727 7111		
Other emergency telephone numbers	Not Available	5	
Other emergency telephone numbers		-	

Considered a dangerous mixture according to Directive 1999/45/EC, Reg. (EC) No 1272/2008 (if applicable) and their amendments. Classified as Dangerous Goods for transport purposes.

DSD classification In case of mixtures, classification has been prepared by following DPD (Directive 1999/45/EC) and CLP Regulation (EC) No 1272/2008 regulations

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R22 Harmful if swallowed. R26 Very toxic by inhalation.

DPD classification [1]

R36 Imitating to eyes.

R48/23 Toxic: danger of serious damage to health by prolonged exposure through inhalation.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R61(2) May cause harm to the unborn child.

Legend: Classification according to regulation (EC) No 1272/2008 [CLP] [1]

1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI Metal Corrosion Category 1, Acute Toxicity (Oral) Category 4, Acute Toxicity (Inhalation) Category 2, Eye Irritation Category 2, Reproductive Toxicity Category 1B, Specific target organ toxicity - repeated exposure Category 1, Chronic Aquatic Hazard Category 1

1. Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

## 2.2. Label elements

CLP label ele







SIGNAL	WORD

Legend:

## DANGER

#### Hazard statement(s)

H290	May be corrosive to metals.
H302	Harmful if swallowed.
H330	Fatal if inhaled.
H319	Causes serious eye irritation.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs.
H410	Very toxic to aquatic life with long lasting effects.

## Supplementary statement(s)

Not Applicable

## Precautionary statement(s) Prevention

	P201	Obtain special instructions before use.
P260		Do not breathe dust/fume/gas/mist/vapours/spray.
	P271	Use only outdoors or in a well-ventilated area.
	P280	Wear protective gloves/protective clothing/eye protection/face protection.
	P234	Keep only in original container.
	P270	Do not eat, drink or smoke when using this product.
and an entire name in a control	P273	Avoid release to the environment.
	P284	[In case of inadequate ventilation] wear respiratory protection.

## Precautionary statement(s) Response

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313	IF exposed 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. (
P337+P313	If eye irritation persists: Get medical advice/attention.
P390	Absorb spillage to prevent material damage.
P391	Collect spillage.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P330	Rinse mouth.

## 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 in accordance with local regulations

## 2.3. Other hazards

Cumulative effects may result following exposure\*.

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May produce discomfort of the respiratory system and skin\*.

REACh - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.1.Substances

See 'Composition on ingredients' in Section 3.2

1.CAS No 2.EC No 3.Index No 4.REACH No	%[weight]	Name	Classification according to directive 67/548/EEC [DSD]	Classification according to regulation (EC) No 1272/2008 [CLP]
	***	capsules		The second secon
1.7439-97-6 2.231-106-7 3.080-001-00-0 4.01-2119548380-42-XXXX	40-50	mercury (elemental)	R61, R26, R48/23, R50/53 <sup>[2]</sup>	Reproductive Toxicity Category 1B, Acute Toxicity (Inhalation) Category 2, Specific target organ toxicity - repeated exposure Category 1, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1; H360D, H330, H372, H400, H410 [3]

Classification by vendor; 2. Classification drawn from EC Directive 67/548/EEC - Annex I; 3. Classification drawn from EC Directive 1272/2008 - Annex VI 4. Classification drawn from C&L

## **SECTION 4 FIRST AID MEASURES**

## 4.1. Description of first aid measures

If skin contact occurs:

- Immediately remove all contaminated clothing, including footw
   Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of imitation.

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
   Ensure complete imagation 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.
- If fumes or combustion products are inhaled remove from contaminated area
- General
- 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.

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

Seek medical attention.

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

Eye 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

- if skin contact occurs:
  - Immediately remove all contaminated clothing, including footw Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.
- If furnes 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

Transport to hospital, or doctor, without delay.

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

(ICSC13719)

Ingestion

Inhalation

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

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Comments

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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]

End of shift at end of workweek

#### BIOLOGICAL EXPOSURE INDEX - BEI

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

1. Total inorganic mercury in urine 35 ug/gm creatinine 2. Total inorganic mercury in blood 15 ug/L

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

## BASIC TREATMENT

for corrosives:

- 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 oederna Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- eyes have been exposed, flush immediately with water and continue to imgate 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
- Skin burns should be covered with dry, sterile bandages, following decontamination.
   DO NOT attempt neutralisation as exothermic reaction may occur.

#### ADVANCED TREATMENT

- 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 V DSW 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 diazeparn
- Proparacaine hydrochloride should be used to assist eye irrigation.

#### EMERGENCY DEPARTMENT

Laboratory analysis of complete blood count, serum electrolytes, BUN, creatinine, glucose, urinalysis, baseline for serum aminotransferases (ALT and AST), calcium, phosphorus and

Fire Incompatibility • Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

- 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).

Fire/Explosion Hazard

Carbon dioxide

## 5.2. Special hazards arising from the substrate or mixture

5.3. Advice for firefighters

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.

Fire Fighting

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.

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

May emit corrosive fumes. May emit poisonous fumes.

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## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

## 6.1. Personal precautions, protective equipment and emergency procedures

## 6.2. Environmental precautions

See section 12

## 6.3. Methods and material for containment and cleaning up

## Minor Spills

Major 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.
- 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**

## 7.1. Precautions for 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.
- ash 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 maintain

## Fire and explosion

Safe handling

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 7.3. Specific end use(s)

See section 1.2

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

## 8.1. Control parameters

DERIVED NO EFFECT LEVEL (DNEL)

Not Available

PREDICTED NO EFFECT LEVEL (PNEC)

Not Available

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
European Union (EU) Third List of Indicative Occupational Exposure Limit Values	mercury (elemental)	Mercury and divalent inorganic mercury compounds including mercuric oxide and mercuric chloride (measured as mercury) (7)	0,02 mg/m3	Not Available	Not Available	Not Available

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(IOELVs) (English)

EMERGENCY LIMITS

Ingredient mercury (elemental) Material name Mercury vapor

TEEL-1 0.15 ma/m3 TEEL-2

TEEL-3

Ingredient mercury (elemental)

Original IDLH

10 mg/m3 / 28 mg/m3

Not Available

Revised IDLH

2 mg/m3 / 10 mg/m3

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 "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

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" velocities which, in

turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant. Air Speed:

8.2.1. Appropriate

engineering controls

Type of Contaminant

vent, vapours, degreasing etc., evaporating from tank (in still air).

0.25-0.5 m/s (50-100 f/min.)

aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)

0.5-1 m/s (100-200

direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)

1-2.5 m/s (200-500 2.5-10 m/s (500-2000

grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

released to the environment.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use 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 sys ems 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

8.2.2. Personal protection











Eye and face protection

Safety glasses with side shields. al goggles Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of

Contact lenses may pose a special hazard; sort 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]

See Hand protection below Wear impervious gloves.

Skin protection Hands/feet protection **Body protection** 

Other protection

See Other protection below Overalls

PVC protective suit may be required if exposure severe

sh unit Ensure there is ready access to a safety shower.

Thermal hazards

Not Available

Respiratory protection

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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	<u></u>	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)

## 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 compartn (Mercury) with no odour, insoluble in water.	nents of a plastic capsule. Grey fine metallic powder (Silv	ver alloy) and silver-white heavy liquid m
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	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 (g/L)	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	-6.9 (Mercury)	VOC g/L	Not Available

## 9.2. Other information

Not Available

## SECTION 10 STABILITY AND REACTIVITY

10.1.Reactivity	See section 7.2
10.2.Chemical stability	<ul> <li>Unstable in the presence of incompatible materials</li> <li>Product is considered stable.</li> <li>Hazardous polymerisation will not occur.</li> </ul>
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
	La L

## SECTION 11 TOXICOLOGICAL INFORMATION

## 11.1. Information on toxicological effects

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 asphysiant. 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 imitating atmosphere developing. Before starting

rise use or a quartity of material in an unventilated or confined space may result in increased exposure and an imitating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

Inhalation of aemospis (mists, fumes), generated by the material during the course of committee and the product of the course of committee and the course of course of committee and the course of course

Inhalation of aerosols (mists, fumes), 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,

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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.

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.

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 (cedema) which may progress to blistering (vesiculation), scaling and thickening of the epidemis. At the microscopic level there may be intercellular cedema of the spongy layer of the skin (spongiosis) and intracellular cedema of the epidemis.

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.

Initiation and skin reactions are possible with sensitive skin

Evidence exists, or practical experience predicts, that the material may cause eye imitation 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.

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:
- 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 curnulative health effects involving organs or biochemical systems.

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mercury (elemental)

TOXICITY

IRRITATION

Not Available

Not Available

TOXICITY

OAICITT

IRRITATION

Oral (rat) LD50: >9.2 mg/kg<sup>[1]</sup>

(Source: RTECS)

Nil reported

Legend:

Ingestion

Skin Contact

Eve

Chronic

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)

Astima-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 intritating 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 astima-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 astima) 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. Animal studies have shown that mercury may be a reproductive effector.

Acute Toxicity
Skin Irritation/Corrosion
Serious Eye
Damage/Irritation
Respiratory or Skin
sensitisation
Mutagenicity

• • •

Carcinogenicity
Reproductivity
STOT - Single Exposure
STOT - Repeated Exposure
Aspiration Hazard

Legend:

★ - Data available but does not fill the criteria for classification

Data required to make classification available
 Data Not Available to make classification

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## 12.1. Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
mercury (elemental)	BCF	720	Fish	0.001mg/L	4
mercury (elemental)	EC50	72	Algae or other aquatic plants	0.0025mg/L	4
mercury (elemental)	LC50	96	Fish	0.004mg/L	4
mercury (elemental)	EC50	240	Fish	0.0003mg/L	5
mercury (elemental)	EC50	48	Crustacea	0.0003mg/L	2
mercury (elemental)	NOEC	2688	Crustacea	0.00025mg/L	2
Legend:	Aquatic Toxicity Da	UCLID Toxicity Data 2. Europe ECH ata (Estimated) 4. US EPA, Ecotox d ata 7. METI (Japan) - Bioconcentral	A Registered Substances - Ecotoxicological Ir atabase - Aquatic Toxicaty Data 5. ECETOC A tion Data 8. Vendor Data	nformation - Aquatic Toxicity 3. Quatic Hazard Assessment Da	EPIWIN Suite V3.12 - ta 6. NITE (Japan) -

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
		E THE THE PART OF

## 12.3. Bioaccumulative potential

redient	

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 Criteria fulfilled?	Not Available	Not Available	Not Available

#### 12.6. Other adverse effects

## SECTION 13 DISPOSAL CONSIDERATIONS

## 13.1. Waste treatment methods

Consult State Land Waste Management Authority for disposal.

#### Product / Packaging disposal

- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility Consult framedicate for to-young specific and 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 licenced to accept chemical and / or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
   The 1991 Environmental Protection (Duty of Care) Regulations SI No. 2839 and amendments should be noted (United Kingdom).

Waste treatment options

Sewage disposal options

Not Available Not Available

## **SECTION 14 TRANSPORT INFORMATION**

## Labels Required



Marine Pollutant



HAZCHEM

Land transport (ADR)

Permite; Lojic +; GS-80, GS-80 Spherical; F400; Ultracaps +; Ultracaps S; SDI Admix; SDI Spherical and New Ultrafine- Capsules

14.1.UN number	3506					
14.2.Packing group	111					
14.3.UN proper shipping name	MERCURY CONTAINED IN MANUFACT	URED ARTICLES				
14.4.Environmental hazard	Not Applicable				100 00 a day 100 a day	
14.5. Transport hazard	Class 8					
class(es)	Subrisk 6.1					
	Hazard identification (Kemler) Not A	pplicable				
	Classification code CT3	pplicable				
14.6. Special precautions for	Hazard Label 8+6.1					
user	Special provisions 366					
	Limited quantity 5 kg					
	1					
Air transport (ICAO-IATA / [	OGR)					
14.1. UN number	3506					
14.2. Packing group	ш					
14.3. UN proper shipping name	Mercury contained in manufactured articles					
14.4. Environmental hazard	Not Applicable					
The second secon	11 11 11 11 11 11 11 11 11 11 11 11 11					-
14.5. Transport hazard	ICAO/IATA Class 8					
class(es)	ICAO / IATA Subrisk 6.1 ERG Code 8L					
	ERG Code 8L					
	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 Instruction	ns	869			
	Passenger and Cargo Maximum Qty / Page	ck	No Limit			
	Passenger and Cargo Limited Quantity Pa	acking Instructions	Forbidden			
	Passenger and Cargo Limited Maximum (	Qty / Pack	Forbidden			
Sea transport (IMDG-Code	/ GGVSee)					
14.1. UN number	3506					
14.2. Packing group	IH					
14.3. UN proper shipping						
name	MERCURY CONTAINED IN MANUFACT	URED ARTICLES				
14.4. Environmental hazard	Marine Pollutant					
14.5. Transport hazard	IMDG Class 8					
class(es)	IMDG Subrisk 6.1					
The state of the s						2011 ==
14.6. Special precautions for	EMS Number F-A, S-B  Special provisions 366					
user	Special provisions 366 Limited Quantities 5 kg					
	Larated Quartities 5 kg				en en manuel	
nland waterways transpor	t (ADN)					
14.1. UN number	3506					
14.2. Packing group	ш					
14.3. UN proper shipping name	MERCURY CONTAINED IN MANUFACT	URED ARTICLES				
14.4. Environmental hazard	Not Applicable					
14.5. Transport hazard class(es)	8 6.1					
1 Her manufacture of a	Classification code CT3					
	Special provisions 366					
14.6. Special precautions for	Limited quantity 5kg					
user	Equipment required PP, EP, TOX, A					
	Fire cones number 0					

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Not Applicable

## **SECTION 15 REGULATORY INFORMATION**

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

## MERCURY (ELEMENTAL)(7439-97-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

EU REACH Regulation (EC) No 1907/2006 - Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles EU REACH Regulation (EC) No 1907/2006 - Annex XVII (Appendix 6) Toxic to reproduction: category 1B (Table 3.1)/category 2 (Table 3.2)

European Customs Inventory of Chemical Substances ECICS (English)

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS) (English)

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of Dangerous Substances - updated by ATP: 31

European Union (EU) Annex I to Directive 67/548/EEC on Classification and Labelling of

Dangerous Substances (updated by ATP: 31) - Reprotoxic Substances

European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and

Packaging of Substances and Mixtures - Annex VI

European Union (EU) Third List of Indicative Occupational Exposure Limit Values (IOELVs) (English)

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

UK Workplace Exposure Limits (WELs)

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : 67/548/EEC, 1999/45/EC, 98/24/EC, 92/85/EC, 94/33/EC, 91/889/EEC, 1999/13/EC, Commission Regulation (EU) 2015/830, Regulation (EC) No 1272/2008 and their amendments as well as the following British legislation: - The Control of Substances Hazardous to Health Regulations (COSHH) 2002 - COSHH Essentials - The Management of Health and Safety at Work Regulations 1999

## 15.2. Chemical safety assessment

For further information please look at the Chemical Safety Assessment and Exposure Scenarios prepared by your Supply Chain if available.

#### **ECHA SUMMARY**

Ingredient	CAS number	Index No	ECHA Dossier	
mercury (elemental)	7439-97-6	080-001-00-0	01-2119548380-42-XXXX	* * *
Harmonisation (C&L nventory)	Hazard Class and Category	Code(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)
2		Acute Tox. 2, Repr. 1B, STOT RE 1, Aquatic Chronic 1, Met. Corr. 1, Acute Tox. 1, Aquatic Acute 1, Acute Tox. 3, STOT RE 2, Skin Sens. 1, Muta. 2, Repr. 1A, STOT		H330, H360, H372, H290, H311, H250, H300, H317, H341, H371
		Ox. Sol. 2, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Acute Tox. 2, Resp. Sens. 1, Muta. 1B, Carc. 1B, Repr. 1B, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1		H272, H301, H312, H314, H317, H330, H334, H340, H350, H360, H372
E	Ox. Sol. 2, Acute Tox. 3, Acute Tox. 4, Skin Corr. 1B, Skin Sens. 1, Acute Tox. 2, Resp. Sens. 1, Muta. 1B, Carc. 1B, Repr. 1B, STOT RE 1, Aquatic Acute 1, Aquatic Chronic 1		GHS09, GHS06, GHS05, GHS08, GHS03, Dgr	H272, H301, H312, H314, H317, H330, H334, H340, H350, H360, H372
	Ox. Sol. 2, Acute Tox. 4, Aquatic Acute 1, Aquatic Chronic 1		GHS07, GHS09, GHS03, Dgr	H272, H302
	Ox. Sol. 2, Acute Tox. 4, Aquatic Acute 1, Aquatic Chronic 1		GHS07, GHS09, GHS03, Dgr	H272, H302
-larmonisation Code 1 = The	e most prevalent classification. Harmon	isation Code 2 = The most severe classification.		
National Inventory	Status			

National Inventory	Status	
Australia - AICS	Y	
Canada - DSL	Y	
Canada - NDSL	N (mercury (elemental))	
China - IECSC	Y	
Europe - EINEC / ELINCS / NLP	Υ	
Japan - ENCS	N (mercury (elemental))	
Korea - KECI	Y	
New Zealand - NZIoC	Y	
Philippines - PICCS	Y	
USA - TSCA	Y	
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)	

## **SECTION 16 OTHER INFORMATION**

## Full text Risk and Hazard codes

H250	Catches fire spontaneously if exposed to air.
H272	May intensify fire; oxidiser.
H300	Fatal if swallowed.
H301	Toxic if swallowed.
 H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
 H314	Causes severe skin burns and eye damage.

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H317 May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled. H340 May cause genetic defects. H341 Suspected of causing genetic defects. H350 May cause cancer. May damage the unborn child. H360D H371 May cause damage to organs. H400 Very toxic to aquatic life. R61 May cause harm to the unborn child.

#### Other information

## DSD / DPD label elements



SAFETY ADVICE

Relevant risk statements are found in section 2.1

-	O PROSESSION OF THE PARTY OF	STATE SHOWING			
Ir	dicat	ionie	of de	anger	l v

	S01	Keep locked up.
	502	Keep out of reach of children.
	S04	Keep away from living quarters.
	S13	Keep away from food, drink and animal feeding stuffs.
	S20	When using do not eat or drink.
	S21	When using do not smoke.
	S22	Do not breathe dust.
The second second second		

In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre. S281 After contact with skin, wash immediately with detergent and plenty of water. S29 Do not empty into drains. This material and its container must be disposed of in a safe way. S35 536 Wear suitable protective clothing. S37 Wear suitable gloves.

In case of insufficient ventilation, wear suitable respiratory equipment. S38 S39 Wear eye/face protection. S40 To clean the floor and all objects contaminated by this material, use water and detergent.

In case of fire and/or explosion, DO NOT BREATHE FUMES.

In case of accident or if you feel unwell IMMEDIATELY contact Doctor or Poisons Information Centre (show label if possible). If swallowed, seek medical advice immediately and show this container or label. Not recommended for interior use on large surface areas.

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.

Avoid exposure - obtain special instructions before use. S53 S56 Dispose of this material and its container at hazardous or special waste collection point. S57 Use appropriate container to avoid environmental contamination. S61 Avoid release to the environment. Refer to special instructions/Safety data sheets. **S63** In case of accident by inhalation: remove casualty to fresh air and keep at rest.

If swallowed, rinse mouth with water (only if the person is conscious).

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

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

S41

S45

**S46** 

S52

S64

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

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TEEL: Temporary Emergency Exposure Limit,
IDLH: Immediately Dangerous to Life or Health Concentrations
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

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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Date of preparation/revision: 23rd September 2015 Department issuing SDS: Research and Development

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