

# 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

1.1.Product Identifier	- 00		
Product name	Permite; Lojic +; GS-80, GS-80 Spherical; F400	0; Ultracaps +; Ultracaps S; SDI Admix; SDI Spherical	and New Ultrafine- Capsules
Synonyms	Not Available		
Proper shipping name	MERCURY CONTAINED IN MANUFACTURE	ED ARTICLES	The second secon
Other means of identification	Not Available		
I.2. Relevant identified us	es of the substance or mixture and us	ses advised against	
Relevant identified uses	For filling of cavitated teeth by dental profession		
Uses advised against	Not Applicable		9 65 8
1.3. 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 S	tates	
Telephone	+1 630 361 9200 (Business hours)		
Fax	Not Available		
Website	Not Available		enter the management and a con-
Email	USA.Canada@sdi.com.au		H X 000 12 12
.4. Emergency telephone	number		
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		

# **SECTION 2 HAZARDS IDENTIFICATION**

# 2.1. Classification of the substance or mixture

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

Page 2 of 13

Issue Date: 12/01/2016

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

Print Date: 23/03/2016

DPD classification [1]

R22 Harmful if swallowed.

R26 Very toxic by inhalation.

R36

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:

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

Classification according to regulation (EC) No

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

1272/2008 [CLP] [1] Legend:

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









	WOR	

SIGNAL WORD | DANGER

### Hazard statement(s)

H290 May be corrosive to metals. H302 H330 H319

Harmful if swallowed. Fatal if inhaled. 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.
P273	Avoid release to the environment.
P284	[In case of inadequate ventilation] wear respiratory protection.
	P260 P271 P280 P234 P270 P273

# 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. Continue rinsing.
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

	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\*.

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

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

#### 3.2.Mixtures

2.EC No 4.REACH No

1.7439-97-6

%[weight]

Classification according

to directive 67/548/EEC (DSD)

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

capsules

Name

2.231-106-7 3.080-001-00-0 4.01-2119548380-42-XXXX 40-50

mercury (elemental)

R61, R26, R48/23, R50/53 [2]

Reproductive Toxicity Category 1B, Acute Toxicity (Inhalation) Category 2, Specific target organ toxicity - repeated exposure Category 1, Acute Aquatic Hazard Cate Chronic Aquatic Hazard Category 1; H360D, H330, H372, H400, H410 [3]

Legend:

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 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 footwear 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 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. 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
  - Transport to hospital, or doctor, without delay.
  - lation of vapours or aerosols (mists, furnes) may cause lung gedema

  - Corrosive substances may cause lung damage (e.g. lung odema, fluid in the lungs).
     Corrosive substances may cause lung damage (e.g. lung odema, 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 becomethasone derivative may be considered. This must definitely be left to a doctor or person authorised by him/her.

(ICSC13719) Seek medical attention

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

# **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 impation 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 minut
- 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 footwear.
  - Flush skin and hair with running water (and soap if availa 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 faise 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 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 becomethasone derivative may be considered.
     This must definitely be left to a doctor or person authorised by him/her.

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

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

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 dermattis, gingivitis, stomattis, 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 - REI

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

Total inorganic mercury in urine

35 ug/gm creatinine

Sampling Time

Comments

2. Total inorganic mercury in blood

Preshift

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 gedema
- Monitor and treat, where necessary, for shock

- Where eyes have been exposed, flush immediately with water and continue to imigate 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 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.

- 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).

# 5.2. Special hazards arising from the substrate or mixture

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

# 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.

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.

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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

- 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
- Minor Spills
- Clean up all spills immediately
  - e/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**

Major Spills

#### 7.1. Precautions for safe handling

- Avoid all personal contact, including inhalation.
- Wear protective dothing when risk of exposure occurs.
- Use in a well-ventilated area.
- 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-us
- 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

Safe handling

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 Storage incompatibility

- DO NOT repack. Use containers supplied by manufacturer only.
- 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

Material name Mercury vapor

TEEL-1 0.15 mg/m3 TEEL-2

TEEL-3

mercury (elemental) Ingredient

Not Available

Not Available

mercury (elemental)

Original IDLH 10 mg/m3 / 28 mg/m3

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.

effective in protecting workers and will opiciary be independent of worker interactions to provide trils 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 appearatus (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 their relaterative the "canture velocities" of freely circulative given the contaminants.

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

Type of Contaminant:

Air Speed:

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

0.25-0.5 m/s (50-100

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

1-2.5 m/s (200-500

grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid 2.5-10 m/s (500-2000

f/min.)

f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

Upper end of the range 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 t/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 ased to the environment.

#### 8.2.2. Personal protection











se a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of

8.2.1. Appropriate

engineering controls

#### Eve and face protection

Safety glasses with side shields. Chemical goggles

contact tenses may pose a special nazard; soft contact tenses 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

Skin protection Hands/feet protection

Wear impervious gloves.

Body protection

See Other protection below

Overalls.

- PVC Apron
- PVC protective suit may be required if exposure severe. Eyewash unit.

Other protection Thermal hazards

Ensure there is ready access to a safety shower.

Not Available

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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.

Half-Face Respirator	Full-Face Respirator	Powered Air Respirator	
HG-AUS P2	-	HG-PAPR-AUS / Class 1 P2	
-	HG-AUS / Class 1 P2		
=	HG-2 P2	HG-PAPR-2 P2 ^	
	HG-AUS P2	HG-AUS P2 - HG-AUS / Class 1 P2	

<sup>^ -</sup> 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 compa (Mercury) with no odour, insoluble in water.	artments of a plastic capsule. Grey fine metallic powder (Silv	er 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
Ipper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
ower 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	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

# 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 asphyxiant. This may happen with little waming 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

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 imitation of the respiratory system, in a significant number of individuals,

Issue Date: 12/01/2016

Permite; Lojic +; GS-80, GS-80 Spherical; F400; Ultracaps +; Ultracaps S; SDI Admix; SDI

Print Date: 23/03/2016 Spherical and New Ultrafine- Capsules following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the imitant 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 haemomagic 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 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 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 (erytherna) and swelling (cedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular cedema of the spongy layer of the skin (spongiosis) and intracellular cedema of the epidermis. Open cuts, abraded or imitated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, pundure 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. Imitation 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 darnage (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 imitation, 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. TOXICITY IRRITATION Not Available Not Available TOXICITY IRRITATION Oral (rat) LD50: >9.2 mg/kg[1] (Source: RTECS) Nil reported 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)

Permite; Lojic +; GS-80, GS-80 Spherical: F400:

Ultracaps +; Ultracaps S; SDI Admix; SDI Spherical

and New Illtrafine

mercury (elemental)

Legend:

Skin Contact

Eve

Chronic

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the initiant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperneactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis. of RADS. RADS (or asthma) following an imitating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the initiating substance. Industrial bronchitis, on the other hand, is a disorder that occurs a very total exposure due to high concentrations of irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as rule of exposure due to high concentrations of irritating substa (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. tions of imitating substance 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

X − Data available but does not fill the criteria for classification
 ✓ − Data required to make classification available

- Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

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

#### 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	A Registered Substances - Ecotoxicological Ir alabase - Aquatic Toxicity Data 5. ECETOC A	nformation - Aquatic Toxicity 3. qualic Hazard Assessment Da	EPIWIN Suite V3.12 - ta 6. NITE (Japan) -

Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

xic 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

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 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 disposa

- 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 can be identified. Freat 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 material)
- material)

  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

Not Available

Sewage disposal options

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 MANUFACTURED ARTICLES	
14.4.Environmental hazard	Not Applicable	
14.5. Transport hazard	Class 8	
class(es)	Subrisk 6.1	
	Hazard identification (Kemler) Not Applicable	
	Classification code CT3	
14.6. Special precautions for	Hazard Label 8+6.1	
user	Special provisions 366	
	Limited quantity 5 kg	
Air transport (ICAO-IATA / I	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	
	ICAO/IATA Class 8	
14.5. Transport hazard	ICAO / IATA Subrisk 6.1	
class(es)	ERG Code 8L	
	ENG COURT	
	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
user	Passenger and Cargo Maximum Qty / Pack	No Limit
	Passenger and Cargo Limited Quantity Packing Instructions	Forbidden
	Passenger and Cargo Limited Maximum Qty / Pack	Forbidden
Sea transport (IMDG-Code	/ GGVSee)	
14.1. UN number	3506	5 5 50 50 50 50 50 50 50 50 50 50 50 50
14.2. Packing group	ш	
14.3. UN proper shipping name	MERCURY CONTAINED IN MANUFACTURED ARTICLES	
14.4. Environmental hazard	Marine Pollutant	
14.5. Transport hazard	IMDG Class 8	
class(es)	IMDG Subrisk 6.1	
	and detection detected transfer and the contract of the contra	
14.6. Special precautions for	EMS Number F-A, S-B	
user	Special provisions 366	
The second secon	Limited Quantities 5 kg	
Inland waterways transpor	t (ADN)	
14.1. UN number	3506	
14.2. Packing group	III	
14.3. UN proper shipping name	MERCURY CONTAINED IN MANUFACTURED ARTICLES	
14.4. Environmental hazard	Not Applicable	
14.5. Transport hazard		
class(es)	8 6.1	
	Classification code CT3	
14.6. Special precautions for	Special provisions 366	
user	Limited quantity 5kg	
	Equipment required PP, EP, TOX, A	
	Fire cones number 0	

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

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)

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, 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 Inventory)	Hazard Class and Category C	ode(s)	Pictograms Signal Word Code(s)	Hazard Statement Code(s)		
2		E 1, Aquatic Chronic 1, Met. Corr. 1, Acute Tox. 1 TOT RE 2, Skin Sens. 1, Muta. 2, Repr. 1A, STOT		H330, H360, H372, H290, H311, H250, H300, H317, H341, H371		
1		x. 4, Skin Corr. 1B, Skin Sens. 1, Acute Tox. 2, B, Repr. 1B, STOT RE 1, Aquatic Acute 1,	GHS09, GHS06, GHS05, GHS08, GHS03, Dgr	H272, H301, H312, H314, H317, H330, H334, H340, H350, H360, H372		
2		x. 4, Skin Corr. 1B, Skin Sens. 1, Acute Tox. 2, B, Repr. 1B, STOT RE 1, Aquatic Acute 1,	GHS09, GHS06, GHS05, GHS08, GHS03, Dgr	H272, H301, H312, H314, H317, H330, H334, H340, H350, H360, H372		
1	Ox. Sol. 2, Acute Tox. 4, Aquatic	Acute 1, Aquatic Chronic 1	GHS07, GHS09, GHS03, Dgr	H272, H302		
2	Ox. Sol. 2, Acute Tox. 4, Aquatic Acute 1, Aquatic Chronic 1		GHS07, GHS09, GHS03, Dgr	H272, H302		
Harmonisation Code 1 = The m	ost prevalent classification. Harmonis	ation Code 2 = The most severe classification.				
National Inventory	Status					
Australia - AICS	Y	and the second s	and the second s	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TO THE PERSON NAMED IN COLUMN T		
Canada - DSL	Y					
Canada - NDSL	N (mercury (elemental))					
China - IECSC	Y					
Europe - EINEC / ELINCS / NLP	Y	•				
Japan - ENCS	N (mercury (elemental))					
Korea - KECI	Υ ,					
New Zealand - NZIoC	Y					
Philippines - PICCS	· ·			STATE SERVICE SERVICES STATES		
USA - TSCA	<b>Y</b>					

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

Legend:

Control and allegate solving a control of the contr					
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.				
The second secon					

All ingredients are on the inventory

Page 12 of 13

Issue Date: 12/01/2016 Print Date: 23/03/2016

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

H317	May cause an allergic skin reaction.		
H334	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.		
H360D	May damage the unborn child.		
H371	May cause damage to organs.		
H400	Very toxic to aquatic life.		
R61	May cause harm to the unborn child.		
	1 15		

#### Other information

#### DSD / DPD label elements



Relevant risk statements are found in section 2.1

Indication(s) of danger Xi

# SAFETY ADVICE

SAFETY ADVICE	
s	01 Keep locked up.
s	22 Keep out of reach of children.
S	Meep away from living quarters.
s	13 Keep away from food, drink and animal feeding stuffs.
s	20 When using do not eat or drink.
s	21 When using do not smoke.
s	22 Do not breathe dust.
S	In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
S2	After contact with skin, wash immediately with detergent and plenty of water.
S	29 Do not empty into drains.
S	This material and its container must be disposed of in a safe way.
s	36 Wear suitable protective clothing.
s	17 Wear suitable gloves.
S	In case of insufficient ventilation, wear suitable respiratory equipment.
S	9 Wear eye/face protection.
S	To clean the floor and all objects contaminated by this material, use water and detergent.
S	In case of fire and/or explosion, DO NOT BREATHE FUMES.
S	In case of accident or if you feel unwell IMMEDIATELY contact Doctor or Poisons Information Centre (show label if possible).
<b>S</b>	If swallowed, seek medical advice immediately and show this container or label.
S	Not recommended for interior use on large surface areas.
S	3 Avoid exposure - obtain special instructions before use.
S	Dispose of this material and its container at hazardous or special waste collection point.
St	Use appropriate container to avoid environmental contamination.
S	Avoid release to the environment. Refer to special instructions/Safety data sheets.
St	In case of accident by inhalation: remove casualty to fresh air and keep at rest.
SK	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 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

Page 13 of 13

Issue Date: 12/01/2016 Print Date: 23/03/2016

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

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
OTA: Odour Threshold Neture

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:

Prepared by: SDI Limited 3-15 Brunsdon Street, Bayswater Victoria, 3153, Australia

Phone Number: +61 3 8727 7111

Date of preparation/revision: 23rd September 2015

Department issuing SDS: Research and Development

Contact: Technical Director

end of SDS