

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 1 OF 17

SECTION 1 PRODUCT IDENTIFICATION

Product Name : Livingstone Biopsy Punch

GA850

Product Type : General Purpose

Product Description : ABS, ABS Resin

Chemical Name : Acrylonitrile Butadiene Styrene

Chemical Formula : $(C_3-H_3-N)_n(C_4-H_6)_n(C_8-H_8)_n$

Chemical Family : Thermoplastic Polymer

Product Use : Can be used to produce extrusion molded articles for commercial or industrial products.

STAINLESS STEEL

1.1. Identification of the product (article according to Reach Regulation)

Corrosion resistant or heat-resistant stainless steel supplied as solid, compact and non-inhalable metal in the form of cold rolled stainless steel strips and sheets.

1.2. Use of product (article according to Reach Regulation)

Our stainless steel products (articles according to REACH Regulation), with special corrosion properties and heat resistance, are supplied in semi-finished form for further processing for products in automotive industry, electronic industry, chemical industry, foodstuff and beverage industry, construction industry, etc.

SECTION 2 HAZARD IDENTIFICATION

GA850

Regulation (EC) No 1272/2008 : This product is not classified as dangerous according to Regulation (EC) No 1272/2008.

Directive 67/548/EEC : This product is not classified as dangerous according to EU Directive 67/548/EEC.

Regulation (EC) No 1907/2006 : This product is complied REACH Regulation (EC) No 1907/2006.

GHS : Not classified

Label elements : Not applicable

Other hazards : Not applicable

LDPE

EC Classification : Not classified as dangerous for supply/use.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 2 OF 17

STAINLESS STEEL

Solid stainless steel products covered by this Safety Data Sheet are shipped as non-flammable, non-explosive, non-reactive articles and do not constitute a hazardous material in solid form.

- Potential health effects** : No carcinogenic effects resulting from exposure to stainless steel have been reported, either in epidemiological studies or in tests with animals.
- Eye Contact** : Dusts or particulates may cause mechanical irritation including pain, tearing, and redness. Scratching of the cornea can occur if eye is rubbed. Fumes may be irritating. Contact with the heated material may cause thermal burns.
- Skin contact (Dermatological effects)** : Stainless steels do not cause nickel sensitization by prolonged skin contact in human. However, nickel is classified as a skin sensitizer. It causes skin sensitization in susceptible individuals through prolonged intimate contact with the skin (e.g. wearing jewellery).
- Wounds** : Nickel metal powder has caused tumors at the site of injection in rodents. However, studies do not suggest a significant risk for humans from nickel-containing prostheses.
- Inhalation** : Dust and fumes which may be produced as a by-product during grinding, polishing, abrasive blasting, welding, pickling and post-fabrication cleaning or similar processes may contain fumes of chromium (VI) oxides. Dusts may cause irritation of the nose, throat, and lungs. Excessive inhalation of metallic fumes and dusts may result in metal fume fever, an influenza-like illness. It is characterized by a sweet or metallic taste in the mouth, accompanied by dryness and irritation of the throat, cough, shortness of breath, pulmonary edema, general malaise, weakness, fatigue.
- Ingestion** : There is no evidence that nickel and its inorganic compounds are carcinogenic when ingested. Nickel is generally recognized as safe as a direct human food ingredient.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

GA850

Chemical Name	CAS Number	EC Number	Percent weight
Acrylonitrile Butadiene Styrene Copolymer	9003-56-9	Polymer	97-99
Styrene	100-42-5	202-851-5	< 0.5

Product contains high molecular weight polymers, and is not expected to be chemically active under normal conditions of handling and processing.

LDPE

3.1 Chemical composition:

Low Density Polyethylene CAS No.: 9002-88-4; 99 % (Minimum).

HAZARDOUS INGREDIENT(S)	%W/W	CAS No.	EC No.	EC Classification
None.				

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available, Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 3 OF 17

STAINLESS STEEL

Austenitic stainless steel grades

No.	Component	CAS Number	% Weight
1	Iron	7439-89-6	Balance
2	Carbon	7440-44-0	0.02 ÷ 0.137
3	Manganese	7439-96-5	0.7 ÷ 7.3
4	Silicon	7440-21-3	0.2 ÷ 1.97
5	Phosphorus	7723-14-0	0.02 ÷ 0.04
6	Sulfur	7704-34-9	0 ÷ 0.012
7	Chromium	7440-47-3	16.5 ÷ 22.5
8	Nickel	7440-02-0	6.35 ÷ 14
9	Molybdenum	7439-98-7	0 ÷ 2.39
10	Nitrogen	7727-37-9	0.01 ÷ 0.099
11	Titanium	7440-32-6	0 ÷ 0.44
12	Copper	7440-50-8	0 ÷ 0.67
13	Cobalt	7440-48-4	0 ÷ 0.8
14	Aluminium	7429-90-5	0 ÷ 0.02
15	Vanadium	7440-62-2	0 ÷ 0.05

Ferritic stainless steel grades

No.	Component	CAS Number	% Weight
1	Iron	7439-89-6	Balance
2	Carbon	7440-44-0	0.01 ÷ 0.066
3	Manganese	7439-96-5	0.17 ÷ 0.68
4	Silicon	7440-21-3	0.12 ÷ 0.53
5	Phosphorus	7723-14-0	0.017 ÷ 0.037
6	Sulfur	7704-34-9	0 ÷ 0.02
7	Chromium	7440-47-3	16 ÷ 24
8	Nickel	7440-02-0	0.1 ÷ 0.48
9	Molybdenum	7439-98-7	0 ÷ 0.03
10	Nitrogen	7727-37-9	0.01 ÷ 0.045
11	Titanium	7440-32-6	0.001 ÷ 0.34

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available. Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: **LIVBIOPUNCH04**

PAGE 4 OF 17

SECTION 4 FIRST AID MEASURES

GA850

General information	: Clothing and shoes must be immediately removed, decontaminated
Skin Exposure	: In case of skin contact with hot polymer immediately immerse in or flush with clean, cold water. If irritation develops, seek medical attention.
Eyes Exposure	: Flush with water for at least 20 minutes. Seek medical attention if irritation persists
Inhalation	: Remove person to fresh air. Assist in breathing if necessary. Seek medical attention.
Ingestion	: Seek medical attention if a significant amount is swallowed

LDPE

4.1 Inhalation	: Remove patient from exposure. Keep patient at rest and give oxygen if breathing difficult. If symptoms develop, obtain medical attention.
4.2 Skin Contact	: After contact with skin, wash with water. In case of burns from hot material immediately cool affected skin as long as possible with cold water. Obtain medical attention.
4.3 Eye Contact	: Remove particles by irrigating with eye wash solution or clean water, holding the eyelids apart. If symptoms persist, obtain medical attention.
4.4 Ingestion	: Unlikely to be hazardous if swallowed. Provided the patient is conscious, wash out mouth with water and give 200-300 ml (half a pint) of water to drink. Do not induce vomiting. If symptoms develop, obtain medical attention.
4.5 Further Medical Treatment	: Unlikely to be required but if necessary treat symptomatically.

STAINLESS STEEL

In its solid form stainless steel does not present an inhalation, absorption, or ingestion hazard.

Grinding, polishing, abrasive blasting, hot rolling, hot forging, thermal cutting, or welding may produce stainless steel dust or fumes containing complex or mixed oxides (spinels) of its components. Metal dust particles may cause eye, skin and/or respiratory system irritation.

For these instances, below are presented examples of first aid measures:

Eye Contact	: In case of overexposure to dusts or fumes, immediately flush eyes with plenty of water for at least 15 minutes occasionally lifting the eye lids. Get medical attention if irritation persists.
Skin Contact	: In case of overexposure to dusts or particulates, wash with soap and plenty of water. Remove and wash contaminated clothing. Get medical attention if irritation develops or persists.
Inhalation	: Not applicable to stainless steel in massive form. In case of overexposure to dusts or fumes, ensure sufficient supply of fresh air and consult a physician if required.
Ingestion	: Not considered an ingestion hazard. However, if excessive amounts of dust or particulates are swallowed, treat symptomatically and supportively. Get medical attention immediately. Rinse mouth. Do not induce vomiting.
Notes to physician	: Inhalation of metal fume or metal oxides may produce an acute febrile state, with cough, chills, weakness, and general malaise, nausea, vomiting, muscle cramps, and remarkable leukocytosis. Treatment is symptomatic, and condition is self limited in 24-48 hours. Chronic exposure to dusts may result in pneumoconiosis of mixed type.

SAFETY DATA SHEET

PAGE 5 OF 17

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 6 OF 17

SECTION 6 ACCIDENTAL RELEASE MEASURES

GA850

Personal precautions : Avoid inhalation.
Environmental precautions : Discharge into the environment must be avoided.
Cleanup:

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Sweep/shovel up or spray with water and collect in a suitable container. Allow molten material to solidify before disposal.
 Avoid production of dust.

LDPE

6.1 Personal Precautions : Caution - spillages may be slippery. Ensure suitable personal protection (including respiratory protection) during removal of spillages. Dust clouds are sensitive to ignition by electrostatic discharge.
6.2 Environmental Exposure Controls : Avoid release to the environment. Do not allow to enter drains, sewers or watercourses.
6.3 Methods for cleaning up : Sweep up and shovel into waste drums or plastic bags.

STAINLESS STEEL

Not applicable to steel in solid state.

Steps to be taken in case material is released:

Minimal problems with spills of this product would occur because of its solid form.

The following precautions apply to spills involving finely divided particles:

- Shut off ignition sources; no flares, smoking or flames should be in or near hazard area.
- Minimize generation of dust; do not touch or walk through spilled material. Clean up using methods which avoid dust generation.
- Compressed air should not be used to clean up spills.
- During cleanup, skin and eye contact and inhalation of dust should be avoided as much as possible.
- Provide local exhaust or dilution ventilation as required.
- Collect material in compatible and appropriately labelled containers.
- For small dry spills, place material into clean dry container with a clean shovel, and cover loosely; move container from spill area.
- Scrap should be reclaimed for recycling. Prevent materials from entering drains, sewers or waterways.
- Comply with local regulations regarding reporting of spills and waste disposal.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 7 OF 17

SECTION 7 HANDLING AND STORAGE

GA850

Handling : Do not handle material without proper protective equipment. Provide adequate ventilation. Maintain good housekeeping in work areas.

Storage conditions : Store in a cool, dry place in the original container when possible. Store below 50°C. Keep away from moisture, excessive heat and sources of ignition. Do not place in direct sunlight.

LDPE

7.1 HANDLING : Control dust formation. Do not eat, drink or smoke at the work place. Wash face and hands before eating, drinking or smoking. Will accumulate static charges that may cause an electric spark (ignition source). Take precautionary measures against static discharges.

7.2 STORAGE : Keep only in the original container. Keep container tightly closed. Keep in a cool, well ventilated place. Keep away from heat and direct sunlight. This product should be kept away from naked flames and other sources of ignition

Storage Temperature: : Ambient.

Storage Life: : Stable at ambient temperature.

Specific use: : Industrial use only.

STAINLESS STEEL

7.1. Handling

There are no special technical measures involved for handling stainless steels. Normal precautions should be taken to avoid physical injury from coiled or bundled products, possibly with sharp edges:

- Straps or bands, used to secure our products, should not be used for lifting. Coils and sheet packages may spring apart when the banding is removed and the banding itself could cause eye or other injury when tension is released.
- All products are likely to have sharp edges that could cause lacerations and flying particles may be produced when shearing.
- Suitable protective clothing and equipment, such as hand and eye protection, should be worn and systems of work adopted to take account of any hazards arising from the risk of fracturing or the release of tension when breaking open banding.
- Suitable racks should be used to ensure stability when stacking narrow coils.

Recommended Work Practices:

Avoid breathing of and contact with fumes and dusts during processing. Use only with adequate ventilation. Wash thoroughly after handling and use, especially before eating, drinking or smoking.

7.2. Storage

Store it in a dry location. Keep away from incompatible materials (see section 10, stability and reactivity). Avoid unnecessary wetting with water, contact with acids and high-humidity environments.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 8 OF 17

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GA850

Exposure limits

Component Name	Reference	TWA		STEL	
		ppm	mg/m3	ppm	mg/m3
Styrene	OSHA PEL*	100	-	-	-
Styrene	ACGIH TLV	20	-	40	-

*OSHA PEL: Acceptable ceiling concentration (ACC) 200 ppm, maximum concentration above ACC 600 ppm

Exposure control : Ventilation, enclosures, or other controls may be needed to keep airborne contaminants below exposure limits.

Personal protective equipment

Respiratory protection : Wear respiratory protection if ventilation is inadequate. Breathing protection device if dust is formed.

Eye protection : Chemical workers goggles recommended.

Protective clothing : Gloves required when handling hot material. In case of fire, wear MSHA/NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.

Ventilation : Provide adequate ventilation when processing material at elevated temperatures.

Other protective equipment : N.A.

LDPE

Provide adequate ventilation when using the material and follow the principles of good occupational hygiene to control personal exposures.

OCCUPATIONAL EXPOSURE LIMITS

SUBSTANCE.	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m³)	STEL (ppm)	STEL (mg/m³)	Note:
Low Density Polyethylene :	9002-88-4	No Occupational Exposure Limit assigned				Note:
Dust.	-		10			Total Dust.
			4			Respirable Dust.



8.1 Respirators

: No special requirements. Provide adequate ventilation, including appropriate local extraction if dusts, fumes or vapours are likely to be evolved. Where engineering controls are not fitted or inadequate wear suitable respiratory protective equipment.



8.2 Eye Protection

: Eye protection with side protection (EN 166).



8.3 Gloves

: Wear suitable gloves if prolonged skin contact is likely. When dealing with hot material: Insulating gloves EN 407 (heat).

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 9 OF 17

8.4 Other

: Protective working garments (e.g. safety shoes EN 344, long sleeved protective working garments). Contaminated clothing should be thoroughly cleaned.

8.5 Environmental precautions

: Protective working garments (e.g. safety shoes EN 344, long sleeved protective working garments). Contaminated clothing should be thoroughly cleaned.

STAINLESS STEEL

8.1. Exposure limit values

No permissible exposure limits or threshold limit value exists for stainless steel.

8.2. Exposure controls

8.2.1. Occupational exposure controls

In the processing of all metallic materials, exposure to fume and dust must be kept below any legally imposed limits in each country. Dust and fume may be generated in use, e.g. by cutting, grinding and welding processes, which may contain materials subject to exposure limits.

To ensure these limits are not exceeded, adequate general or local ventilation or fume extraction should be provided. In accordance with European and national health and safety regulations, it is necessary to assess the need for personal protection equipment and appropriate approved respiratory protection should be provided for those workers at risk of inhalation.

Respiratory Protection

When exposure cannot be maintained below permissible limits during welding, brazing, machining, and other processes which may generate airborne contaminants use an appropriate respirator. A competent health and safety professional should be consulted for respirator selection, fit testing, and training.

Skin Protection

Suitable gloves for protection against physical injury and skin contact during handling and processing should be worn. Good personal hygiene practices should be followed including cleansing exposed skin with soap and water.

Eye Protection

Dust resistant safety goggles are recommended under circumstances where particles could cause mechanical injury such as grinding or cutting.

Other Protective Clothing or Equipment

Adequate footwear (safety shoes if necessary) and clothing that protects skin from prolonged or repeated contact.

SECTION 9

PHYSICAL/CHEMICAL PROPERTIES

GA850

Physical State	: Solid Form
Odor and Appearance	: Plastic pellets in natural or compounded color with characteristic odor.
Softening Point	: > 100 °C
Specific Gravity	: 1.04-1.07 (Water =1)
Percent Volatile (Vol %)	: Nil
Solubility in water	: Insoluble
Solubility (Qualitative)	: Soluble in polar solvents

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available, Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 10 OF 17

LDPE

Form	: Solid. Powder.
Colour	: White. Off-white.
Odour	: Odourless.
pH (Value)	: Not applicable.
Decomposition Temperature(°C)	: > 300 (572°F)
Boiling Point (°C)	: Not applicable.
Melting Point (°C)	: 104 - 115 (219 - 239°F)
Flash Point (°C) [Closed cup]	: > 390 (> 734 °F)
Auto Ignition Temperature (°C)	: > 450 (>842°F)
Explosive Properties	: Explosive in presence of open flames, sparks and static discharge. Minimum explosive limit: 10 mg/m ³ (typically).
Minimum Ignition Energy (mJ)	: 10 (typically)
Oxidising Properties	: Not applicable.
Vapour Pressure (Pascal)	: Not applicable.
Specific Gravity	: 0.90 – 0.93
Solubility (Water)	: Insoluble.
Percent Volatile by volume (%)	: < 0.1

STAINLESS STEEL

9.1. General information

Appearance: Varying from very light grey, to shiny metallic light grey to bright mirror.

Odour: Odourless.

Physical state: Solid.

9.2. Important health, safety and environmental information

pH	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable
Flammability (solid, gas)	: Not applicable (Our products are not flammable.)
Explosive properties	: Not applicable (Our products are not explosive.)
Oxidizing properties	: Not applicable
Vapour pressure	: Not applicable
Water solubility	: Insoluble
Partition coefficient	: Not applicable
Viscosity	: Not applicable
Vapour density	: Not applicable

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available, Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 11 OF 17

Evaporation rate : Not applicable
Specific gravity (H₂O = 1) : 7,7 ÷ 8
Magnetic Properties : Austenitic stainless steel is non-magnetic in most conditions, but may be paramagnetic in some supply conditions (e.g.: cold worked-2H-finishing). Duplex, ferritic and martensitic stainless steels are magnetic.

SECTION 10 STABILITY AND REACTIVITY

GA850

Stability : Stable
Condition to Avoid : Avoid temperatures above 300°C.
Material to Avoid : Avoid solvents and oxidizing agents
Dangerous decomposition : Carbon monoxide, carbon dioxide, styrene, acrylonitrile, hydrocarbon, cyanide.

LDPE

10.1 Chemical Stability : Stable under normal conditions. Decomposes at temperatures above 300°C.
10.2 Conditions to avoid : Heat and direct sunlight.
10.3 Materials to avoid : Direct contact with open flames, self igniting and explosive materials.
10.4 Hazardous Decomposition Product(s) : Carbon monoxide, Carbon dioxide, Hydrocarbons and Acrid smoke.

STAINLESS STEEL

10.1. Stability : **Stainless steels are stable and non-reactive under normal ambient atmospheric conditions.**
10.2. Condition to avoid : Not applicable.
10.3. Materials to avoid : Keep away from oxidizers, stainless steel reacts with strong acids to form explosive hydrogen gas and heat.
10.4. Hazardous decomposition products : No hazardous decomposition products known.

SECTION 11 TOXICOLOGICAL INFORMATION

GA850

Acute Toxicity

Chemical name	Route	Species	Acute Toxic Value
Styrene	Oral	Rat	LD ₅₀ 5000 mg/kg
	Inhalation	Rat	-

Irritating/corrosive effects

Eye Irritation : Prolonged contact can causes eye irritation
Skin Irritation : Prolonged contact can cause skin irritation

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available, Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 12 OF 17

Respiratory Irritation : May cause allergic respiratory response.
Ingestion Irritation : Swallowing larger amounts may cause injury

LDPE

Low toxicity under normal conditions of handling and use.

11.1 Ingestion : Low oral toxicity. Low Density Polyethylene: LD50 (rat) : >5000 mg/kg
11.2 Inhalation : Low acute toxicity. Dusts and vapours or fumes evolved during thermal processing may cause irritation to the respiratory system.
11.3 Skin Contact : No evidence of irritant effects from normal handling and use.
11.4 Eye Contact : Dust may have irritant effect on eyes. Permanent damage is unlikely.
11.5 Long Term Exposure : WChronic effects are unlikely.

STAINLESS STEEL

Long-term experience of stainless steels in the most varied applications has demonstrated that these very resistant materials are eminently suitable where hygiene is of paramount importance (e.g. food processing and food preparation). Grinding, polishing, abrasive blasting, hot rolling, hot forging, thermal cutting, or welding may produce stainless steel dust or fumes containing complex or mixed oxides of its components (that can be found in the composition of stainless steel).

Dust and fumes Over long periods, inhalation of excessive airborne levels may have long term health effects, primarily affecting the lungs, e.g. lung fibrosis, or pneumoconiosis. Overexposure to iron oxide can cause siderosis (deposits of iron in the lungs) which may affect pulmonary function. However, studies of workers exposed to nickel powder and dust and fumes generated in the production of nickel alloys and stainless steels have not indicated a respiratory cancer hazard.

Iron Excessive exposure of eyes to airborne iron dust can cause conjunctivitis, choroiditis, and retinitis. Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in development of a benign pneumoconiosis, called siderosis, which is observable via X-ray. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of iron oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chromium Solid stainless steel does not contain hexavalent chromium. Chromium as Cr(VI) compound can be found in fumes and dust formed by grinding, polishing, abrasive blasting or welding of stainless steel. Cr(VI) compounds can also be formed by cleaning stainless steel with strong oxide formers at high pH. Cr(VI) is classified by Confirmed Human carcinogen. Chromium as metal or Cr(II) and Cr(III) oxides is listed as not classifiable as a human carcinogen. However, epidemiological studies amongst welders indicate no extra risk of cancer when welding stainless steels, compared to the slightly increased risk when welding steels that do not contain chromium.

Nickel For stainless steels there is no direct evidence of carcinogenic effects in man, nor indirect evidence from animals tested by relevant routes, inhalation or ingestion. In other studies, using non-relevant routes in animals, alloys with up to 40% nickel caused no significant increase in cancer. Epidemiological studies of workers exposed to nickel powder and to dust and fume generated in the production of nickel alloys and of stainless steel have not indicated the presence of a significant respiratory cancer hazard.

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available, Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 13 OF 17

Molybdenum & Copper	Both molybdenum and copper are necessary nutritional elements. High doses of molybdenum may antagonize absorption of copper. Likewise, high doses of copper may antagonize absorption of molybdenum. Overexposure to molybdenum causes anemia, gout-like syndrome and increases uric acid levels. In experimental animals molybdenum toxicity causes weight loss, harmful changes of the liver, kidneys, and bones and impaired reflexes.
Silicon	Elemental silicon is an inert material which appears to lack the property of causing fibrosis in lung bones. However, slight pulmonary lesions have been reported in laboratory animals from intra-tracheal injections of silicon dust. Silicon may cause chronic respiratory effects. Crystalline silica (silicon dioxide) is a potent respiratory hazard. However, the likelihood of crystalline silica generation during normal processing is very remote.
Manganese	Overexposure to manganese can result in central nervous system effects referred to as manganism, including symptoms of muscular weakness, impaired speech and tremors similar to Parkinson's disease.
Cobalt	The classification of cobalt is valid for alloys. Cobalt dust may cause an asthma-like disease. Cobalt is classified as "Confirmed Animal Carcinogen with Unknown Relevance to Humans".

SECTION 12 ECOLOGICAL INFORMATION

GA850

Toxicity	: No relevant studies identified.
Persistence and degradability	: The product is not easily biodegradable.
Bio-accumulative potential	: Insoluble in water. Not expected to be bioaccumulative.
Mobility in soil	: No relevant studies identified.
Other adverse effects	: Not expected to pose a significant ecological hazard.

LDPE

12.1 Environmental Fate and Distribution	: Solid insoluble in water. Floats on water. The product has low mobility in soil.
12.2 Persistence and Degradation	: The product is non-biodegradable.
12.3 Toxicity	: Low toxicity to aquatic organisms.
12.4 Effect on Effluent Treatment	: Unlikely to affect biological treatment processes.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 14 OF 17

STAINLESS STEEL

Not applicable for solid stainless steel product in its as shipped form.

Articles produced from solid product are not an ecological hazard. No information found on specific product to establish its effect if released into the environment in finely divided form. The solid product is not expected to migrate easily into soil or groundwater based upon its insoluble form, however, finely divided material can become mobile in water and contaminate soil and groundwater. This material may persist in the environment for long periods, based upon its corrosion resistant, insoluble, and non-biodegradable properties. In addition, heavy metals may contaminate the food chain and ultimately be consumed by humans. Some components will react with oxygen to form metallic oxides, the rate of oxidation depends upon prevailing conditions (iron oxidizes most rapidly in moist air).

- | | |
|--|----------------------|
| 12.1. Eco-toxicity | : Not applicable. |
| 12.2. Mobility | : Not applicable. |
| 12.3. Persistence and degradability | : No data available. |
| 12.4. Bio-accumulative potential | : No data available. |
| 12.5. Results of PBT assessment | : Not applicable. |
| 12.6. Other adverse effects | : Not applicable. |

SECTION 13 DISPOSAL CONSIDERATIONS

GA850

Disposal methods:

Transfer to an approved disposal area in accordance with national, state and local regulations. Recycling uncontaminated packaging recommended.
 Package must be recycled in compliance with national legislation and environmental regulations.

LDPE

Disposal methods:

- | | |
|------------------------------------|--|
| 13.1 Regulatory information | : Do not allow to enter drains, sewers or watercourses. Disposal should be in accordance with local, state or national legislation. |
| 13.2 Recommended: | : Normal disposal is via incineration operated by an accredited disposal contractor. Refer to manufacturer/supplier for information on recovery/recycling. |

STAINLESS STEEL

Stainless steel scrap generated from product processing (shearing, cutting, de-burring etc.) is nondangerous waste and should be handled and recycled according to related legislation.
 Product dusts from processing may be classified as a hazardous waste, depending on various properties of the dust or the mixture which contains it (e.g. toxicity, solubility, flammability).

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 15 OF 17

SECTION 14 TRANSPORT INFORMATION

GA850

Regulatory information	UN number	Class	Packing group	Label	Additional information
DOT	Not regulated	-	-	-	-
ADR / RID	Not regulated	-	-	-	-
IMDG CODE	Not regulated	-	-	-	-
ICAO / IATA	Not regulated	-	-	-	-

LDPE

International Transport Regulations: : Not classified as dangerous for transport

UN No.: : Not applicable.

Road/Rail (ADR/RID) : Not applicable.

Class/Packing Group : Not applicable.

IMDG Class : Not applicable.

ICAO/IATA Class : Not applicable.

STAINLESS STEEL

In the case of heavy product, exercise care for prevention of load shifting. It is desirable to cover the product with tarpaulin in order to prevent infiltration of rain water. During transportation must be assured the stability of the products.

In case of unloading the material in cold condition from truck into warehouse, in order to prevent the condensation phenomenon, it is recommended to check material for humidity and care that it is dried quickly.

14.1. Hazardous materials description / Proper shipping name

Not applicable for solid formed alloy product.

14.2. Hazard class

Not applicable for solid formed alloy product.

14.3. Identification number

Not applicable for solid formed alloy product.

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: LIVBIOPUNCH04

PAGE 16 OF 17

SECTION 15 REGULATORY INFORMATION

GA850

US Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 29 CFR 1910.1200.

HMIS -USA

Health – 0, Flammability – 1, Reactivity – 0

National Fire Protection Association - USA

Health – 0, Flammability – 1, Reactivity – 0

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

EU Directives 67/548/EEC, 1999/45/EC and Regulation (EC) No 1272/2008

The product is not classified as dangerous for supply according to the Regulation (EC) No 1272/2008 and the EC directive 67/548/EEC and 1999/45/EC.

Canada – WHMIS

Material is not controlled under WHMIS.

LDPE

EC Classification : Not classified as dangerous for supply/use.

Hazard Symbol : Not applicable.

Risk Phrases : Not applicable.

Safety Phrases : Not applicable.

INTERNATIONAL INVENTORIES

EINECS (Europe) : EINECS: Polymer. Monomers included.

STAINLESS STEEL

- Directive 2011/65/EC (RoHS II)
on "Restriction of hazardous substances in electrical and electronic equipment"
- Regulation 1935/2004/EC (Foodstuffs)
on "materials and articles intended to come into contact with food"
- Regulation 1907/2006/EC (REACH)
on "Registration, Evaluation, Authorisation and Restriction of Chemicals"
- Directive 2000/53/EC (ELV Directive)
on "end-of life vehicles"
- Directive 2012/19/EU (WEEE Directive)
on "waste electrical and electronic equipment"

Issue Date: 06/11/2024
 Last Revision Date: N/A
 Superseded Date: N/A
 Version Number: 01

SAFETY DATA SHEET

Product Code: **LIVBIOPUNCH04**

PAGE 17 OF 17

SECTION 16 OTHER INFORMATION

GA850

The information in this document is based on our best present. Nevertheless, it does not constitute a guarantee for any specific product features and does not establish any a legally binding contract.

DOT	: Department of transportation
ADR	: European agreement concerning the international carriage of dangerous goods by road.
RID	: Regulations concerning the international carriage of dangerous goods by rail.
IMDG - CODE	: International maritime dangerous goods code
ICAO	: International Civil Aviation Organization
IATA	: International air transport association
GHS	: Globally Harmonized System of Classification and Labeling of Chemicals
WHMIS	: Workplace Hazardous Materials Information System

LDPE

This Safety Data Sheet was prepared in accordance with Directive 2001/58/EC and EC Regulation (EC) No. 1907/2006.

RELENE meets the requirements stipulated in IS 10146 on, 'Specification for Polyethylene and its copolymers for safe use in contact with foodstuff, pharmaceuticals and drinking water'. Additives incorporated in RELENE grades conform to the positive list of constituents as prescribed in IS 10141. The product and the additives incorporated in it also comply with the FDA: CFR Title 21,177.1520 Olefin polymer.

The following sections contain revisions or new statements: 1 - 16

This Safety Data Sheet and the health, safety and environmental information it contains are intended to provide a summary of our knowledge and guidance regarding use of the designated Product. Its contents are offered in good faith as accurate and complete as of the date specified below, but without guarantee. The data herein applies only to the Product sold by entities of the Reliance group and not to products sold by others. It relates only to the Product and does not relate to its use in combination with any other product or material or in any process.

Local laws and regulations and conditions of use and suitability of the product for particular uses are beyond the control of Reliance; all risks of use, storage, handling, transportation and disposal of the Product are therefore assumed by the user and Reliance expressly disclaims all warranties of every kind and nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the Product. Reliance shall not be responsible for any damage or injury resulting from abnormal use of the Product, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the Product.

Appropriate warnings and safe handling procedures should be provided to all handlers and users. In the case of a user in the European Union, as per Article 34 of REACH Regulation (EC) No. 1907/2006, user shall communicate to Reliance any new information on hazardous properties of the Product and/or new information relevant to risk management measures for the identified uses.

Alteration or re-publication of this document in whole or part is strictly prohibited.

STAINLESS STEEL

The compliance with EU Directive and EC Regulations was declared based on test results performed in accredited laboratories:

- test report no. FUHLCP2020-04134: for compliance with Directive 2011/65/EC (RoHS II);
- test report no. FUFDCP2019-04460: for compliance with Regulation 1935/2004/EC (Foodstuffs).

END OF SDS

Information provided on this document is presented in good faith and believed to be correct based on the best data currently available, Livingstone International makes no representations or warranties, expressed or implied as to the completeness or accuracy of the information. In no event will Livingstone International be liable for any errors or omissions in the information provided herein. Information is supplied upon the condition that any persons or corporate receiving same will make independent determination as to its suitability for their own purposes prior to use, and in no event will Livingstone International be responsible for damages of any nature whatsoever resulting from the use of product or reliance upon information provided. Information is provided on an "as is" basis, no representation or warranties, either expressed or implied of fitness for a particular purpose or of any other nature are made herein with respect to information of the product.