MATERIAL SAFETY DATA SHEET

Compagny: Genlismetal
Product name: **Galva Zinc Alloys**
Creation: Decembre 2014
Version: 2.0

MSDS n°:
Update: 17/11/2025

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND COMPANY

1.1. PRODUCT IDENTIFIER

Galvanization Alloys (A 05, A 07, A 10, Galva 5, Galva 7, Galva 10, Galva 15, G5+, G7+, ….)

1.2. IDENTIFIED USES / USES ADVISED AGAINST

Galvanizing alloys are used in the steel galvanizing industry.

1.3. IDENTIFICATION OF THE COMPANY

Manufacturer /Supplier:	GENLIS METAL
Address:	ZI du Layer 3 rue Gustave Eiffel 21110 GENLIS FRANCE
Tel:	+33.(0)3 80 45 91 40
Fax:	+33.(0)3 80 45 91 49
Email:	info@genlismetal.fr

1.4. EMERGENCY CALL

France Centre Anti-poison:	INRS / ORFILA: +33 (0)1 45 42 59 59

SECTION 2. HAZARDS IDENTIFICATION

2.1. GHS CLASSIFICATION

European regulation (EC) 1272/2008, as amended:
Not Classified as hazardous according to the European regulation (EC) 1272/2008, as amended.

European Directive 67/548/EEC or 1999/45/EC, as amended:
Not Classified as hazardous according to European Directive 67/548/EEC or 1999/45/EC, as amended.

Hazard summary:
Zinc solid metal and Zinc alloys are not classified as hazardous. In the form in which it is marketed, the product causes no danger to health through inhalation. High temperatures or mechanical action may form dust and fume that can irritate the eyes, skin and respiratory tract..

2.2. LABEL ELEMENTS

EC label-according to Regulation (EC) 1272/2008. as amended:
There is therefore no obligation to label the product in accordance with regulation (EC) 1272/2008 (CLP,Annex I, 1.3.4).

European Directive 67/548/EEC or 1999/45/EC, as amended:
There is therefore no obligation to label the product in accordance with Annex VI, nº 9.3, EC Directive67/548/EEC.

2.3. OTHER HAZARDS

- High temperatures or mechanical action may form dust and fume that can irritate the eyes, skin and respiratory tract.
- Fine particles from processing (grinding, cutting, polishing and welding) may be readily ignitable, and need to be controlled.
- Fine particles in contact with water or humidity in air may release flammable gases in hazardous quantities.
- For molten alloys there is a risk of explosions if in contact with water, and react violently in contact with oxides of some other metals or nitrates.
- The PBT and vPvB criteria of Annex XIII to the REACH Regulation (EC) No 1907/2006 do not apply to inorganic substances.

SECTION 3. COMPOSITION / INFORMATION ABOUT COMPONENTS

3.1. SUBSTANCES

Nom chimique de la substance	N° CAS	Teneur/Concentration	CE n°1272/2008	OEL **
	N° REACH		67/548/EC classification *	
Numéro d'enregistrement	N° CE		CLP/GHS classification	PBT/vPvB
Zinc	7440-66-6	60 à 97%	Non classé	non
	01-2119467174-37		Non classé	
	231-175-3		Non classé sous forme solide	non
Aluminium	7429-90-5	3.8 à 28%	Non classé	oui
	01-2119529243-45-		Non classé	
	231-072-3		Non classé sous forme solide	non
Magnésium	7439-95-4	0.003 à 0.15%	Non classé	Non
	01-2119537203-49		Non classé	
	231-104-6		Non classé sous forme solide	non
Cérium	7440-45-1	0 à 0.06%	Non classé	Non
	01-2119480148-35		F,R11	
	231-099-0		Flam.solid 1 H228	non
Lanthanium	7439-91-0	0 à 0.06%	Non classé	Non
	01-2119971281-39		Non classé	
	231-154-9		Non classé sous forme soli	non

* For the full text of the phrases mentioned in this Section, see Section 16.
** see section 8.

SECTION 4. FIRST AID MEASURES

4.1. DESCRIPTION OF NECESSARY FIRST-AID MEASURES

If inhaled:	- In case of dust or fume generation during some work operations and inhalation: - Move to fresh air. - In case of ongoing discomfort consult a physician.
In case of eye contact:	- In case of dust contact, rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. - If particles comes into contact with eyes treatment for mechanical irritation or injury may be required. - In case of ongoing discomfort consult a physician. - In case of contact with liquid alloys, hospital treatment.
In case of skin contact:	- In case of burns from hot/liquid alloys, rinse with plenty of water and contact physician. - In case of liquid alloys splashes, remove affected clothing and shoes.
If swallowed:	Not applicable here.

4.2. MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Not applicable here.

4.3. INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED, IF NECESSARY

Not applicable here.

SECTION 5. FIRE FIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

This product does not present fire or explosion hazards as shipped. Small chips, dust and fines may be ignitable.

Suitable extinguishing media

- Use class D extinguishing agents on dust, fines or molten metal.

Unsuitable extinguishing media

- Do not use water with liquid Zinc alloys.
- Do not use water, foam or halogenated extinguishing agents.

5.2. SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

- The product as such is not flammable.
- Fine particles in contact with water may generate flammable gases in hazardous quantities.
- Use firefighting extinguishing methods suitable to surrounding conditions.
- Fine dispersed particles (dust, powder) may form explosive mixtures in contact with air.
- Molten Zinc alloys may explode on contact with water or moisture.
- Sudden violent release of steam and gases or explosion can occur when water is trapped under molten Zinc alloys.

5.3. SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS

- Wear approved positive pressure, self-contained breathing apparatus when appropriate.
- Use personal full heat protective clothing when appropriate.

SECTION 6. ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Advice for non-emergency personnel

- Stop the metal flow by using dry sand as a dyke.
- Do not use shovels or hand tools to detain the metal flow.
- Use only preheated or specially coated and rust free tools in contact with molten Zinc alloys.
- Let molten metal solidify and cool down to room temperature before picking up.

Advice for emergency responders

- See protection measures listed in section 8.

6.2. ENVIRONMENTAL PRECAUTIONS

- Prevent spills.
- Collect scrap for recycling.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

- Pick up mechanically.
- Let molten metal solidify and cool down to room temperature before picking up.

6.4. REFERENCE TO OTHER SECTIONS

- Refer to protection measures listed in sections 7 and 8.
- Refer to disposal considerations listed in sections 13.

SECTION 7. HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

- Ensure good ventilation / local exhaust at the workplace in the case of operations generating dust,like cutting, grinding, polishing
- Remelt ingots needs to be kept dry and preheated before charging into molten metal.
- Recently cast products may still be hot, avoid touching metal in casting areas.
- Product intended for remelting must be stored in dry area, carefully inspected and preheated before charging into molten metal.
- Avoid dust formation.
- Eating is prohibited at work place.
- Use protection measures listed in section 8.

7.2. CONDITIONS FOR STORAGE, INCLUDING INCOMPATIBILITIES

- Product should be kept dry.
- Pay attention to stack stability.
- Keep in a well-ventilated, dry place.
- Keep away from Incompatible products.
- Suitable storage areas should be clearly marked.

7.3. SPECIFIC USE(S)

For further information, please contact: Supplier.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. CONTROL PARAMETERS

Professional limited exposure: France (Source INRS)
Aluminium (métal), CAS 7429-90-5: VLEP 8h= 10 mg/m³,
Aluminium (Pulvérulent), CAS 7429-90-5: VLEP 8h = 5 mg/m³
Zinc (oxyde de) fumées CAS 1314-12-2 : VLEP 8h = 5 mg/m³,
Zinc (oxyde de) poussières CAS 1314-13-2 : VLEP 8h = 10 mg/m³

Occupational exposure limits (air):

Aluminium:

- Germany
  10*/3** mg/m³ (*inhalable dust; ** respirable dust)
  Biological tolerable limit : 200 µg/LUrine at end of shift
- Great Britain
  10*/4** mg/m³ (*inhalable dust; ** respirable dust)
- United States
  OSHA 15 mg/m³ (total dust); 5 mg/m³ TWA (respirable fraction)

8.2. EXPOSURE CONTROLS

Appropriate engineering controls

- Provide appropriate exhaust ventilation at places where dust is formed.
- Special ventilation should be used to convey finely divided metallic dust generated by grinding, sawing or polishing operations, in order to eliminate explosion hazards.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures

Respiratory protection
- Not required under recommended conditions of use.
- In case dust or fumes are released, personal protective equipment required if exposure limits are exceed.
- If during production process, dust is generated, and if ventilation is inadequate, wear respirator type FFP2 (EN 149:2001) is advisable.

Hand protection
- Protective gloves
- For handling of molten metal, the use of protective gloves to prevent skin contact is required.

Eye protection
- Safety glasses with side shields.
- During production process where excessive dust is generated, e.g. material transfer, cutting or polishing; the use of safety goggles is advisable.
- For handling of molten metal, the use of safety glasses or face shields to prevent eye contact is required. Contact lenses should not be worn where industrial exposures to this material are likely.

Skin and body protection
- Use recommended work clothes.
- For handling of molten metal, the use of protective clothing (flame retardant-EN certified for molten metal handling) to prevent skin contact is required. No synthetics fabrics even as undergarments.

Hygiene measures
- Eye wash bottles or eye wash stations in compliance with applicable standards. Must be available in areas handling molten metal for use in case of burns.
- When using do not eat, drink or smoke.
- Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls
- Take into account the requirements of national and international legislation on emissions.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. PHYSICAL AND CHEMICAL PROPERTIES

- **Physical state:** solid at 20 ºC.
- **Appearance:** metal alloy in massive form
- **Colour:** silvery or silver grey (also when hot)
- **Odour:** odourless

9.2. OTHER INFORMATION

pH Not relevant
Melting point/freezing point Approx. 416 °C
Boiling point/boiling range Approx 907 ºC (Zinc)
Flash point Not relevant
Evaporation rate Not relevant
Flammability The product is not flammable.
Explosive properties Not relevant
Vapour pressure 31Pa at 450°C
Vapour density Not relevant
Relative density Approx. 7.14 g/cm3, at 20°C Zinc
Bulk density Not relevant
Solubility(in water 20ºC) Almost insoluble
Solubility/qualitative Not relevant
Partition coefficient: n-octanol/water Not relevant
Autoignition temperature Not relevant
Decomposition temperature Not relevant
Viscosity Not relevant
Oxidizing properties Not relevant

SECTION 10. ESTABILITY AND REACTIVITY

10.1. REACTIVITY

Stability: Stable
Incompatibilities: Strong Oxidizing Agents
Instable Conditions: Contact with Strong Oxidizing Agents
Decomposition products: Hydrogen.

10.2. CHEMICAL STABILITY

Stable under normal conditions of use, storage and transport.

10.3. CONDITIONS TO AVOID

- Molten alloy may react violently in contact with certain metal oxides and nitrates none.
- Molten alloy may cause explosions in contact with water or wet surfaces.

10.4. MATERIALS TO AVOID

Acid products, alkaline, oxidizing agents.

10.5. HAZARDOUS DECOMPOSITION PRODUCTS

The Zinc metal can react with acids product and alkaline to degage hydrogen fumes, a combustible gaz, explosive and none odorant less heavy than air.

SECTION 11. TOXICOLOGICAL INFORMATION

11.1. TOXICOKINETICS, METABOLISM AND DISTRIBUTION

High toxicity: zinc powder:
Inhalation LC50 rat: >5,4 mg/L/4 h
LD50 oral rat: >2000 mg/kg body mass

Skin irritation/ corrosion: non-irritating (based on a cross-reference reading of a slightly soluble Zn constituent, a zinc oxide (Löser, 1977 ; Lansdown, 1991))
Zinc powder, zinc dust and zinc oxides can irritate the skin
Ingestion of zinc or zinc constituents can irritate the stomach

Severe eye damage/ irritation: non-irritating (Van Huygevoort, 1999 c, d)

Zinc dust and zinc smoke can irritate the eyes

Respiratory and skin sensitization: No known sensitization (based on a cross-reference reading of a slightly soluble Zn constituent, a zinc oxide (Van Huygevoort, 1999 g, h))
When treated (heat or abrasion) it can release zinc oxide or zinc dust. Inhaling zinc oxide/ zinc vapours can cause "zinc fever".
If large concentrations of zinc vapours, dust deposits and constituents penetrate the respiratory tracts they can cause zinc fever, nausea, headaches and shivering. The fever can appear after having been in contact a few hours. Symptoms generally disappear after one or two hours.

Mutagenicity of germinal cell: no biological type genotoxic activity (based on a cross-reference reading of Zn constituents, no mutagenicity classification is required) Zinc chemical security report (CSR) 2010)

Cancerogenicity: no experimental or epidemiological proof exists that justifies having to classify zinc constituents for cancerous activity (base on a cross-reference reading between Zn constituents, no classification for cancerogenicity is required) (Zinc chemical security report (CSR) 2010)

Reprotoxicity: no experimental or epidemiological proof exists that justifies having to classify zinc constituents for reprotoxicity or development alteration (base on a cross-reference reading between Zn constituents, no classification for reprotoxicity is required) (Zinc chemical security report (CSR) 2010)

One shot STOT exposure: no sufficient experimental or epidemiological proof of specific toxicity for any organ (one shot exposure) (based on a cross reading of ZnO; no classification for any specific organ toxicity is required (one shot exposure: STO-SE)) (Heydon and Kagan, 1990 ; Gordon and others, 1992 ; Mueller and Seger, 1985 (quoted in the Zinc chemical security report (CSR) 2010)

Repeated STOT exposure: no sufficient experimental or epidemiological proof of specific toxicity for any organ (repeated exposure) (based on a cross reading of ZnO; no classification for any specific organ toxicity is required (repeated exposure: STO-RE)) (Lam and others, 1985, 1988 ; Conner and others. , 1988 (quoted in the Zinc chemical security report (CSR) 2010).

Aspiration danger: No information..

SECTION 12. ECOLOGICAL INFORMATION

12.1. ECOTOXICITY

The basis of acute aquatic toxicity data on zinc contains data on 11 standard species obtained under standard testing conditions at different pH and hardness. Since the transformation / dissolution of zinc metal is dependent on pH, all the available data on acute aquatic toxicity has also been studied separately for 2 different pH ranges.

The reference values for acute aquatic toxicity, based on the lowest EC50 values observed in the bases of corresponding data at different pH and expressed as Zn ++ ion concentration are:

- For pH < 7: 0,413 mg Zn++/l (48 h - Test Ceriodaphnia dubia according to test standard US EPA 821-R-02-012 ; ref. : Hyne and others 2005)
- For pH > 7-8,5 : 0,136 mg Zn++/l (Test 72 h - Selenastrum capricornutum (=Pseudokircherniella subcapitata) according to test standard OECD 201 ; ref.: Van Ginneken, 1994)

Zinc metal has limited solubility, compared to soluble zinc compounds. In particular, the solubilization of Zn ++ ions massive forms of zinc is very limited. The specific reference values for acute aquatic toxicity of zinc metal powder and massive forms, respectively:

- For metallic zinc powders (based on solubilization capacity of 46% of the finer powders and more conservative charge of 1 mg/l à pH 8 (RA zinc, BCE 2008)):
  - For pH < 7: 0,9 mg Zn/l (according to test 48 h of Ceriodaphnia dubia, see here above)
  - For pH > 7-8,5 : 0,3 mg Zn/l (according to test 72 h of Selenastrum capricornutum, see here above)
  - Factor M : 1
- For zinc in massive form (particle diameter of> = 1 mm, based on a conservative estimate (for small particles) solubilization capacity of 3.6% and 0.9% at pH 6 and 8.

Solubilization of zinc in massive forms of the (larger) placed on the EU market is much lower than the values shown below):

- For pH < 7: 11,5 mg Zn/l (according to test 48 h of Ceriodaphnia dubia, see here above)
- For pH > 7-8,5 : 15,1 mg Zn/l (according to test 72 h of Selenastrum capricornutum, see here above)

The classification of the metallic zinc in solid form is also based on the following:

- Zinc is an essential element actively regulated throughout the food chain, not bio-accumulate and are not bio-unabated.
- Zinc is rapidly removed from the water column, its rate of elimination in appropriate environmental conditions is> 70% within 28 days. In addition, zinc is actually sequestered in the sediment sulfide fraction, which severely limits its remobilization in the water column.

CSEP-zinc :
Pure water 20,6* µg/L
Salt water 6,1* µg/L
freshwater sediment 235.6 mg / kg dry mass of sediment **.
Saltwater sediment 113 mg / kg dry mass of sediment **.
soil 106.8 mg / kg dry mass of soil ***.

***Added value," PNECadd "**
** A generic bioavailability factor of 0.5 is applied by default, according to the risk assessment of the EU (ECB 2008).
*** A bioavailability factor / aging 3 is applied by default (ECB 2008).

Aluminium CAS 7429-90-5 :
LC50 poison 96h: >100 mg/l
EC50 daphnia 48h: >100 mg/l
IC50 algae 72h: >100 mg/l.

12.2. PERSISTENCE AND DEGRADABILITY

Not relevant.

12.3. BIOACCUMULATIVE POTENTIAL

Zinc CAS 7440-66-6: BCF: 92
Aluminium CAS 7429-90-5: BCF: 18 ; Log Pow: <3

12.4. MOBILITY

Zinc in the metallic form has limited bioavailability and poses no immediate ecological risk. However, processes in the environment may alter its bioavailability. In aquatic systems, zinc bioaccumulates in both plants and animals. In terrestrial systems, the mobility of zinc in soil is dependent on soil conditions, such as cation exchange capacity, pH, redox potential, and chemical species present in the soil. Zinc also bioaccumulates in terrestrial plants, vertebrates, and mammals, with plant uptake from soil dependent on the plant species, soil pH, and soil composition.

In the Chemical Safety Report, a solid–water partition coefficient of 158.5 L/kg (log value 2.2) was applied for zinc in soils (Zinc Chemical Safety Report, 2010).

12.5. PBT AND VPVB ASSESSMENT

The PBT and vPvB criteria of Annex XIII to the REACH Regulation (EC) No 1907/2006 do not apply to inorganic substances. Therefore a PBT/vPvB assessment was not performed.

12.6. OTHER ADVERSE EFFECTS

No.

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

- Zinc alloys are subject of recycling.
- If recycling is not practicable, dispose of in compliance with local regulations.

13.2. CONTAMINATED PACKAGING

Not applicable.

SECTION 14. TRANSPORT INFORMATION

14.1. INTERNATIONAL TRANSPORT REGULATIONS

Not subject.

SECTION 15. REGULATORY INFORMATION

15.1. APPLICABLE LAWS OR REGULATIONS

- Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), as amended.
- Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations.
- Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, as amended.
- Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended.
- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste.
- REGULATION (EC) No 166/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC.
- Directive 2006/11/EC of the European Parliament and of the Council of 15 February 2006 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community.
- EH40/2005. Workplace Exposure Limits, as amended through 1,10, 2007 (WELs) Published by the Health and Safety Executive (HSE). Issued under the Control of Substances Hazardous to Health Regulations - as amended.
- Límites de Exposición Profesional para Agentes Químicos en España 2011.

15.2. CHEMICAL SAFETY ASSESSMENT

A Chemical Safety Report has not been carried out for this alloy.

SECTION 16. OTHER INFORMATION

Full Text of H-statements referred to under sections 2 and 3
H260: In contact with water releases flammable gases which may ignite spontaneously.

Full Text of R-phrases referred to under sections 2 and 3
R15: Contact with water liberates extremely flammable gases.

Revision Statement
This revision updates all sections of the Material Safety Data Sheet.

Abbreviations and acronyms
- GHS: Global Harmonized System.
- CAS: Chemical Abstracts Service.
- EC50: Effective Concentration 50%.
- DNEL: Derived no-effect level
- INSHT: Instituto Nacional de Seguridad e Higiene en el Trabajo.
- LC50: Lethal Concentration 50%.
- LD50: Lethal Dose 50%.
- vPvB: very Persistent and very Bioaccumulative.
- NOAEC: No observed Adverse Effect Concentration.
- NOAEL: No observed Adverse Effect Level.
- PBT: Persistent, Bioaccumulative and Toxic.
- PE: Polystyrene.
- TWA: Time weighted average.
- VLA-ED: Valor límite ambiental de exposición diaria.
- WELs: Workplace Exposure Limits.
- Bwt: Bodyweight.

Bibliography
This Safety Data Sheet has been prepared in accordance with Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).
Chemical Safety Report of metal aluminum.
EH40/2005. Workplace Exposure Limits, as amended through 1,10, 2007 (WELs) Published by the Health and Safety Executive (HSE). Issued under the Control of Substances Hazardous to Health Regulations - as amended.