

SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Aluminum - shot, pellets, wire, rod, foil, sheet, target
Formula: Al
Supplier: Zhejiang Zhongjin Aluminum Co., Ltd
Cidong Industrial Zone, Cixi, 315300
Zhejiang, China
Telephone: 86-574-58583332
Fax: 86-574-58583301
Email: zhongjinlvye@zhongjinalu.com
Emergency: 86-574-58583314
Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Not classified as hazardous
GHS Label Elements:
Signal Word: N/A
Hazard Statements: N/A
Precautionary Statements: N/A

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Aluminum
CAS#: 7429-90-5
%: 100
EC#: 231-072-3

4 FIRST AID MEASURES

General Measures: Under normal handling and use, exposure to solid forms of this material present few health hazards. Subsequent operations such as grinding, melting or welding may produce potentially hazardous dust or fumes which can be inhaled or come in contact with the skin or eyes.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek medical attention.

INGESTION: Rinse mouth with water. Do not induce vomiting. Seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing, brush material off skin, wash affected area with soap and water. Seek medical attention if symptoms develop or persist.

EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms develop or persist.

Most Important Symptoms/Effects, Acute and Delayed: Inhalation of aluminum dust or powder may cause irritation to the respiratory system. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other relevant information available.

5 FIREFIGHTING MEASURES

Extinguishing Media: Use Class D or other metal extinguishing agent on fines, dusts or molten metal. Use coarse water spray on chips and turnings.

Unsuitable Extinguishing Media: Do not use water in fighting fires around molten metal. Do not use halogenated extinguishing agents on small chips/fines.

Specific Hazards Arising from the Material: This product does not present fire or explosion hazards as shipped. Small chips, fine turnings and dust from processing may be readily ignitable. May emit toxic metal oxide fumes under fire conditions.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing when necessary.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Avoid dust formation.

Methods and Materials for Containment and Cleaning Up: Sweep or scoop up. Place in properly labeled closed containers. Scrap can be collected for recycling.

Environmental Precautions: Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE

Precautions for Safe Handling: Keep material dry. Avoid creating dust. Avoid breathing dust or fumes. Provide adequate ventilation if dusts are created. See section 8 for information on personal protection equipment.

Conditions for Safe Storage: Keep material dry. Store in a sealed container. Store in a cool, dry area. Protect from moisture, acids and strong oxidizers. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Aluminum

OSHA/PEL: 15 mg/m³ total dust, 5 mg/m³ respirable fraction

ACGIH/TLV: 1 mg/m³ respirable

Engineering Controls: Whenever possible the use of local exhaust ventilation or other engineering

controls is the preferred method of controlling exposure to airborne dust and fume to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Respiratory Protection: If permissible levels are exceeded, use NIOSH approved dust respirator.

Eye Protection: Safety glasses

Skin Protection: Wear impermeable gloves, protective work clothing as necessary.

9 **PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:

Form: Solid in various forms

Color: Silvery metallic

Odor: Odorless

Odor Threshold: Not determined

pH: N/A

Melting Point: 660 °C

Boiling Point: 2467 °C

Flash Point: N/A

Evaporation Rate: N/A

Flammability: N/A

Upper Flammable Limit: N/A

Lower Flammable Limit: N/A

Vapor Pressure: 1 mm Hg @ 1284

Vapor Density: N/A

Relative Density (Specific Gravity): 2.702 g/cc

Solubility in H₂O: Insoluble

Partition Coefficient (n-octanol/water): Not determined

Autoignition Temperature: No data

Decomposition Temperature: No data

Viscosity: N/A

10 **STABILITY AND REACTIVITY**

Reactivity: No data

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: In the form of chips, fines or dust aluminum may react with water, acids, or alkalis to generate flammable hydrogen gas. Molten aluminum may have a violent reaction with water, strong oxidizers or metal oxides. Halogenated carbons, including halogenated fire extinguishing agents may react violently with finely divided or molten aluminum.

Conditions to Avoid: Avoid creating or accumulating fines or dusts.

Incompatible Materials: Oxidizing agents, acids, alkalis, halogenated compounds, iron oxide.

Reactions are more likely to occur when the metal is molten or in a finely divided state.

Hazardous Decomposition Products: Aluminum oxide fume, hydrogen.

11 TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin, eyes. Product as shipped does not present an inhalation hazard; however subsequent operations may create dusts or fumes which could be inhaled.

Symptoms of Exposure: May cause irritation if dusts or fumes are inhaled or swallowed. Fines/dusts may irritate skin and eyes.

Acute and Chronic Effects: There is strong evidence that aluminum (compounds) can cause irritation following exposure via either inhalation or injection. Modest evidence of an effect exists for reproductive toxicity following oral exposure, for neurological toxicity following either oral or injection exposure, and for bone toxicity following injection exposure. All other effects were judged to be supported by either limited evidence or no clear evidence at all.¹

Acute Toxicity: No data

Carcinogenicity: NTP: Not identified as carcinogenic IARC: Not identified as carcinogenic

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION

Ecotoxicity: No data

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: Do not allow material to be released to the environment without proper governmental permits. No further relevant information available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

14 TRANSPORT INFORMATION

DOT/ADR/IATA/IMDG Regulations: Not regulated

UN Number: N/A

UN Proper Shipping Name: N/A

Transport Hazard Class: N/A

Packing Group: N/A

Marine Pollutant: No

Special Precautions: N/A

15 **REGULATORY INFORMATION**

TSCA Listed: All components are listed.

Regulation (EC) No 1272/2008 (CLP): N/A

Canada WHMIS Classification (CPR, SOR/88-66): N/A

HMIS Ratings: Health: 0 Flammability: 0 Reactivity: 0

NFPA Ratings: Health: 0 Flammability: 0 Reactivity: 0

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 **OTHER INFORMATION**

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Sibbo Aluminum shall not be held liable for any damages resulting from handling or from contact with the above product.

Prepared by: Sibbo Aluminum

Revised/Reviewed: August 2014

Safety Data Sheet

Epe foam liner

Version : V1.0.0.1

Creation Date : 2020/06/15

Revision Date : 2020/06/15

*Prepared according to UN GHS (the 5th revised edition)

1 Identification of the chemical and supplier

Product identifier

Product Name	Epe foam liner
CAS No.	9002-88-4
EC No.	200-815-3
Molecular Formula	(C ₂ H ₄) _n
Product photo	

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

Relevant identified uses	Used for Sealing of packing.
Uses advised against	Please consult manufacturer.

Details of the supplier of the Safety Data Sheet

Name of the company	Yantai Yongsheng Sealing Technology Co., Ltd
Address of the company	Xiejiazhuang Industry Park, High-Tech Zone, Yantai City, Shandong Province, China
Post code	264670
Telephone number	+86 (0) 535-6752211
Fax number	+86 (0) 535-6756269
E-mail address	sales@winshine-seals.com

Emergency phone number

Emergency phone number	+86 (0) 535 -6753631
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2 Hazards identification

Hazard classification according to GHS

Hazard classification according to GHS	Not applicable
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Label elements

Hazard pictograms	Not applicable
Signal word	Not applicable

Hazard statements

Hazard statements	Not applicable
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Precautionary statements

◆ Prevention

Prevention	Not applicable
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◆ Response

Response	Not applicable
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◆ Storage

Storage	Not applicable
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◆ Disposal

Disposal	Not applicable
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Hazard description

◆ Physical and chemical hazards

	Solid, insoluble in water, floats on water, combustible, vapors/gas heavier than air, toxic smoke/fumes in a fire.
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◆ Health hazards

Inhaled	The product is not thought to produce either adverse health effects or irritation of the respiratory tract following discomfort.
Ingestion	Accidental ingestion of the product may be harmful to the health of the individual.
Skin Contact	No harm.
Eye	Not applicable .But this product may cause temporary discomfort following direct contact with the eye.

◆ Environmental hazards

	Please refer to 12th chapter of SDS.
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3 Composition/information on ingredients

Component	Cas No.	EC No.	Concentration (weight percent, %)
Poly(ethylene)	9002-88-4	200-815-3	100

4 First aid measures**Description of first aid measures**

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if fell uncomfortable.
Skin contact	Wash off with plenty of water for at least 15 minutes and consult a physician if fell uncomfortable.

Ingestion	Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.
Inhalation	Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

| Most important symptoms and effects, both acute and delayed

1	Please see section 11.
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| Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Firefighting measures

| Extinguishing media

Suitable extinguishing media	Dry chemical, carbon dioxide, water spray, alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter or spread fire.

| Specific hazards arising from the substance or mixture

1	Containers may explode when heated.
2	May expansion or decompose explosively when heated or involved in fire.

| Advice for firefighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

| Personal precautions, protective equipment and emergency procedures

1	Ensure adequate ventilation. Remove all sources of ignition.
2	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3	Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

| Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

| Methods and materials for containment and cleaning up

1	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
2	Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7 Handling and storage

Precautions for handling

1	Handling is performed in a well ventilated place.
2	Keep away from heat/sparks/open flames/ hot surfaces.
3	Take precautionary measures against static discharges.

Precautions for storage

1	Keep containers tightly closed .
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/ hot surfaces.
4	Storage temperature shall not be higher than 50 °C.

8 Exposure controls/personal protection

Control parameters

◆ Occupational Exposure limit values

Occupational Exposure limit values	No information available
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◆ Biological limit values

Biological limit values	No information available
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◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 160.1~GBZ/T 160.81-2004 Determination of toxic substances in workplace air(Series standard).

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.

Personal protection equipment

General requirement	     
Eye protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand protection	Wear protective gloves (such as butyl rubber) , passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and body protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

9 Physical and chemical properties

Physical and chemical properties

Appearance	White round solid
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Odor	No information available
Odor threshold	No information available
pH	Not soluble in water, no pH value
Melting point/freezing point(°C)	130-145
Initial boiling point and boiling range(°C)	>35
Flash point(Closed cup, °C)	Not applicable
Evaporation rate	Not applicable
Flammability(solid, gas)	No information available
Upper/lower explosive limits[%(v/v)]	Upper limit : No information available ; Lower limit : No information available
Vapor pressure(kPa)	Not applicable
Vapor density(Air = 1)	Not applicable
Relative density(Water=1)	0.92
Solubility(mg/L)	Insoluble in water
n-octanol/water partition coefficient	No information available
Auto-ignition temperature(°C)	330~410
Decomposition temperature(°C)	300
Viscosity(mm²/s)	Not applicable

10 Stability and reactivity

| Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	No information available
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Strong oxidizing agent.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

| Acute toxicity

Acute toxicity	No information available
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| Carcinogenicity

ID	Cas No.	Component	IARC	NTP
1	9002-88-4	Poly(ethylene)	Category 3	Not Listed

| Others

Poly(ethylene)(Component)	
Skin corrosion/irritation	Based on available data, the classification criteria are not met.
Serious eye damage/irritation	Based on available data, the classification criteria are not met.
Skin sensitization	Based on available data, the classification criteria are not met.
Respiratory sensitization	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT-single exposure	Based on available data, the classification criteria are not met.
STOT-repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Based on available data, the classification criteria are not met.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.

12 Ecological information

| Acute aquatic toxicity

Acute aquatic toxicity	No information available
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| Chronic aquatic toxicity

Chronic aquatic toxicity	No information available
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| Others

Persistence and degradability	LOW
Bioaccumulative potential	LOW (LogKOW = 1.2658)
Mobility in soil	LOW (KOC = 14.3)
Results of PBT and vPvB assessment	Poly(ethylene) does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907/2006, annex XIII.

13 Disposal considerations

| Disposal considerations

Waste chemicals	If medical advice is needed, have product container or label at hand.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section 13.1 and 13.2.

14 Transport information

| Label

Label	Not applicable
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| IMDG-CODE

IMDG-CODE	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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ICAO/IATA-DG

ICAO/IATA-DG	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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UN-ADR

UN-ADR	NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
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15 Regulatory information**International chemical inventory**

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AICS
Poly(ethylene)	Not Listed	Listed	Listed	Not Listed	Listed	Listed	Listed	Listed

【EINECS】 European Inventory of Existing Commercial Chemical Substances

【TSCA】 United States Toxic Substances Control Act Inventory

【DSL】 Canadian Domestic Substances List

【IECSC】 China Inventory of Existing Chemical Substances

【NZIoC】 New Zealand Inventory of Chemicals

【PICCS】 Philippines Inventory of Chemicals and Chemical Substances

【KECI】 Existing and Evaluated Chemical Substances

【AICS】 Australia Inventory of Chemical Substances

16 Others**Information on revision**

Creation Date	2020/06/15
Revision Date	2020/06/15
Reason for revision	-

Reference[1]IPCS:The International Chemical Safety Cards (ICSC) ,website: <http://www.ilo.org/dyn/icsc/showcard.home>.[2]IARC , website: <http://www.iarc.fr/>.

[3]OECD: The Global Portal to Information on Chemical Substances, website:

http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en.[4]CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.[5]NLM:ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.[6]EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.[7]U.S. Department of Transportation:ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.[8]Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.**Abbreviations and acronyms****CAS** –Chemical Abstracts Service**PC-STEL**- Short term exposure limit**DNEL** - Derived No Effect Level**RPE** - Respiratory Protective Equipment**CMR** - Carcinogens, mutagens or substances toxic to reproduction**PC-TWA** - Time Weighted Average**IARC** - International Agency for Research on Cancer**PNEC** –Predicted No Effect Concentration

LC₅₀ - Lethal Concentration 50%**LD₅₀** - Lethal Dose 50%**NOEC** -No Observed Effect Concentration**EC₅₀** - Effective Concentration 50%**PBT** - Persistent, Bioaccumulative, Toxic**POW** - Partition coefficient Octanol:Water**BCF** - Bioconcentration factor (BCF)**vPvB** - very Persistent, very Bioaccumulative**IMDG**-International Maritime Dangerous Goods**ICAO/IATA**-International Civil Aviation Organization/International Air Transportation Association**UN**-The United Nations**ACGIH**-American Conference of Governmental Industrial Hygienists**NFPA**-National Fire Protection Association**OECD**-Organization for Economic Co-operation and Development

Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 5th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user' s reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.