SDS No. A5087BY・WY−02
Update day: April 1, 2019

SAFETY DATA SHEET

1. Chemical Product and Company Identification

Product name	:	Aluminum Welding rod and wire A5087BY・WY
Company name	:	Nikkei Sangyo Co., Ltd.
Address	:	5407-1, Kambara, Shimizu-ku, Shizuoka-shi, Shizuoka
Charge section	:	Quality Control Section
Phone number	:	054-388-2223
FAX number	:	054-388-2836
Urgent address	:	Same as above

2. Hazards Identification

GHS classification : This product is either of the outside where ward not within proper limits, the classification that I cannot classify are targeted for the physicochemical risk of the GHS classification and each dangerous noxious item together.

Important sign : There is not the influence currently under the general environment, but welding, blowout, mine dust with various processing such as the heating, Hume may give stimulation to eyes, respiratory organs, and, as for the arcs, there might be the burn.

GHS label elements

Picture indication or symbol :

Signal word : Danger

Hazard statement : Organ (the lungs) by for the long term or the repetition revelation disorder
It is fear of the harm to an aquatic by long-term continuous influence
Hazardousness for the health
Specific target organ toxicity (the repetition toxicity) division 1 (the lungs)
Hazardousness for the environment
Aquatic environmental noxious (for a long term) division 4

Precautionary statement

Safety measures : When I use this product, do not do eating and drinking or smoking.

Emergency measure : Do not absorb mine dust, Hume.
When I feel sick, the diagnosis of the doctor be treated.

3. Composition / Information on Ingredients

Distinction of a chemical substance, the mixture : Mixture

Chemical name (generic name) : Aluminum

A chemical formula or structural formula CAS No. An ingredient and content :

Ingredient	Content (%)	CAS No.	Industrial Safety and Health Law	The PRTR Law
Si	0.25 MAX	7440-21-3		
Fe	0.40 MAX	7439-89-6		
Cu	0.05 MAX	7440-50-8		
Mn	0.70～1.1	7439-96-5	○	○
Mg	4.5～5.2	7439-95-4		
Cr	0.05~0.25	7440-47-3	○	
Zn	0.25 MAX	7440-66-6		
Ti	0.15 MAX	7440-32-6		
Be	0.0003 MAX	7440-41-7		
Zr	0.10～0.20	7440-67-7		
Al	Re	7429-90-5		

Remarks

1: The ○ mark of the Industrial Safety and Health Law (the Occupational Safety and Health Act) column shows that it is a chemical substance targeted for a notice to fix for a law.

2: I show that it is an object chemical substance needing it the ○ mark of the PRTR method (discharge, movement registration of the environmental pollution material) column grasps a discharge to fix for a law, quantity of movement, and to report.

4. First Aid Measures

Inhalation : When I inhale Hume, aluminum mine dust abundantly, I move it to the fresh place of the air promptly and try for rest, thermal insulation, and receive treatment for the doctor immediately. When I feel sick, receive the medical treatment of the doctor, a diagnosis.

Skin contact : When I handle a product in the state that heated, in the case of a slight burn, cool an affected part with a large quantity of cold water promptly. In the case of a severe burn, receive the diagnosis of the doctor promptly. When I feel sick, receive the medical treatment of the doctor, a diagnosis.

Eye contact	:	When product, Al mine dust got into eyes, I wash it under clean running water without rubbing it by hand. Consult the ophthalmologist promptly afterwards when a pain is left. When I feel sick, receive the medical treatment of the doctor, a diagnosis.
Ingestion	:	When I swallow a product, the oral toxicity is low, but consult the doctor if I seem to feel delivery, abnormality as much as possible. When I feel sick, receive the medical treatment of the doctor, a diagnosis.

5. Fire-Fighting Measures

In the case of an early fire, I cover it with non-inflammable things such as the asbestos and interrupt oxygen and it is suffocation digestion or extinguishes a fire with extinguishant using dry sand.
The extinguishant does not use the extinguishant of water and chloride with a powdery fire extinguisher, a carbon dioxide fire extinguisher.

6. Accidental Release Measures

It is an individual and, under the general environment, does not leak out.

7. Handling and Storage

Handling

Technical measures	:	When sets upon occurs at the time of the processing of the product, it prevents you from being scattered in the air again not to let you deposit in a dust state. The facilities of mention take measures against "revelation prevention and protection measures, and 8" wears a tool for protection.
Safe handling instructions	:	Because there is the risk to cut a hand in the end face of the product, I cannot touch it barehanded.
	:	At the time of the processing, I warn it sets upon gets into eyes, and not to breathe it in.
Hygiene measures	:	I am unnecessary, but the facilities such as local site exhausts usually take measures against lower than standard that was listed in exposure and protection measures permission density 8 by density of Hume, the mine dust when mine dust, Hume occurs when I cannot maintain it.

Storage

Safe storage condition	:	The storage place arranges lighting necessary for the handling, the illumination.
	:	Keep it from acid, alkali, a powerful oxidizer, chloride apart.
Safe storage wrapping	:	Use a wrapping with the moisture resistance.

8. Exposure Controls / Personal Protection

Facilities measures : I am unnecessary, but the facilities such as local site exhausts usually take measures when the following standard cannot maintain below the density of Hume, mine dust when mine dust, Hume occurs.

Permission density : I do not need the management, but the following is usually applied when mine dust, Hume occurs.

Nihon Sangyo hygiene society (2012 version) : that is not set 6)

ACGIH (2012 version) As aluminum metal and an insoluble compound TLV-TWA 1 mg/m3 (breathing-related fraction) 7)

Others : American OSHA PEL
Aluminum dust 15.0 mg/m3 (the whole atmosphere)
5.0mg/m3 (can breathe)
Aluminum Hume 5.0 mg/m3

Individual protection measures

Respiratory protection : Is necessary for the state of the product; do. I wear a tool for protection for breathing not to inhale it directly when earthly affairs, Hume and gas are generated.

Hand protection : When I may damage the fingers, use protection gloves.

Eye protection : Wear a tool for protection of appropriate eyes.

Protective Clothing : Wear established working clothes, safety boots.

9. Physical and Chemical Properties

The appearance

Shape : A solid, linearity, stick

Color : Silver

Smell : No smell

The melting point / freezing point : No data

The boiling point : No data

Initial boiling point / boiling range : No data

Ignition point : No data

The upper limit / lower limit of combustion or the explosion range : No data

Vapor pressure : No data

Specific gravity (relative density) : No data

Spontaneous combustion temperature : No data

10. Stability and reactivity

Reactivity : No information

Chemical stability : I am stable if usually kept in an atmosphere in the state of the product.
The surface is protected with a thin natural oxide film and, with atmospheres, usually is no longer oxidized.

Possibility of hazardous reactions : I react in the state of aluminum powder and a minute tip as follows.

Material of a reacting partner	The different chemical substance which occurs
Water	In the case of fines, I gradually generate hydrogen and heat
Heat	I am oxidized according to the rate of climb of the temperature
Acid and alkali	I react and produce hydrogen
Powerful oxidizer	I generate high heat with the intense oxidation

Conditions to avoid : Contact with the blend most moving passage hazardous substance

Incompatible materials : Acid, alkali, powerful oxidizer

Hazardous decomposition products : Hydrogen

11. Toxicological Information

Acute toxicity : * Because it is hard to be absorbed from gastrointestinal tract in the form of aluminum, the acute whole body toxicity is generally low. When I take it in abundantly, I stimulate gastrointestinal tract and am harmful. 1)
* Fibrosis was not seen by the examination that I inhaled highly-pure aluminum powder, and was exposed to a rat, a marmot, a hamster. By the examination that gave 100 mg/ endotracheally to a rat, localized pulmonary fibrosis was seen. 3)

Skin corrosive / skin acridity : * When aluminum powder sticks in skin, I produce aluminum salt and may produce local stimulation, but am secondary influence. 1)
* Mine dust and Hume may show physical acridity to the respiratory tract, skin, the gastrointestinal tract. 1)

Serious lesional / eyes acridity for eyes : * Even if there is a small metal particle in the neighborhood of the retina of eyes of the Homo sapiens or the retina, there is not usually acridity, and the influence is not seen. The big particle and piece injure cornea and eyelid. 1)
* Mine dust and Hume may show physical acridity to the eyes. 1)

Respiratory or Skin Sensitization	:	* In the examination that buried powder and a piece of aluminum in skin, the hypersensitivity reaction was not seen. 3)
Mutagenesis (generative cell mutagenesis)	:	* I was positive in the sisters chromatid exchange examination using the human leukocyte cultured cell. 3) * Increase depending on density was recognized in the irregular DNA examination using the human culture astrocyte. 3)
Carcinogenicity	:	* Aluminum in itself is not evaluated in IARC (international cancer research organization). 1) * If Group1 "shows carcinogenicity for Homo sapiens" in IARC, the aluminum smelting is classified. In an epidemiologic study, it is reported that the aluminum smelting increases the cancer incidence of lungs of the worker, bladder and other organs. However, the causative agent of these cancers is not identified. 1)
Chronic toxicity	:	* TDLo when a mouse was given it orally for many generations took a neonatal action at 1,260 mg/kg (accumulation dose), and a body, the influence on other measurements were seen. 2) * The influence on neonatal action and delayed-action influence were seen in TDLo when they performed the dosage (route of administration of drug ignorance) to the rabbit of pregnancy 2-27 days at 67.5 mg/kg (accumulation dose). 2) * In the animals which I fed which included aluminum metal powder 340ppm, growth of 2 and the third generation decreased. 1) * In the examination that I fed that mixed 500-1000 μg/g of aluminum with a pregnancy rate (6-19 days), there was not the influence to an embryo and a fetal death rate, the number of the parishioners, the fetus weight and the length. 3) * On the other hand, "I am healthy with aluminum", and there is the description that I am not harmful to health in the communication meeting. 8)
The specific target organ toxicity - Single exposure	:	* Because it is hard to be absorbed from gastrointestinal tract in the form of aluminum, the acute whole body toxicity is generally low. When I take it in abundantly, I stimulate gastrointestinal tract and am harmful. 1) * Fibrosis was not seen by the examination that I inhaled highly-pure aluminum powder, and was exposed to a rat, a marmot, a hamster. By the examination that gave 100 mg/ endotracheally to a rat, localized pulmonary fibrosis was seen. 3)

The specific target organ toxicity - Repeated exposure	:	* Dyspnea, a cough were weak and produced an emphysema, a non-tuberosity lungs fiber symptom (aluminum lungs symptom) when exposed to Hume and the mine dust which included aluminum at high purity chronically. 4) * TCLo (density addicted to a minimum) when a man inhaled it intermittently for one year and came to light was 4 mg/m3, and a cough, dyspnea, a weight loss were seen. 2) * Pneumothorax was seen with one man revealed by high purity aluminum mine dust. 3)
	:	* A chronic lung disease was seen in the men who died after it was exposed to metalloid aluminum mine dust in Japan for three years. Chronic stroma-related pneumonia with a large number of vacuolation was seen in severe vacuolation and the both lungs except it to the right superior lobe as main autopsy views. 3) * A long-term welding worker of aluminum has a report that a neuropsychosis was seen, but does not become clear about the causation currently. 4) * I may raise metal heat (metal fume fever) when exposed to Hume of aluminum. 1) * Skin inflammation, bronchial asthma, inappetence, dyspnea, a dry cough, breathing pain in the chest, abdominal pain might be caused chronically when they inhale mine dust and Hume for a long time. 5) * Of time when it came to light intermittently inhalational to a rat for five hours a day for 30 days Stroma-related fibrosis, hypoglycemia, the change of the blood component were seen in TCLo at 206 mg/m3. 2) * After giving a rat 5 mg and 20 mg/kg of aluminum with drinking water more than six months, aluminum density rose with blood bone, liver, kidney. A morbid change (neurofibril denaturation) was accepted with the dose of 20 mg/kg by kidney and brain. 3) * On the other hand, "I am healthy with aluminum", and there is the description that I am not harmful to health in the communication meeting. 8)
Aspiration respiratory hazardousness	:	There is no information

12. Ecological Information

The habits toxicity	:	No data
Persistence / Degradability	:	No data
Bioaccumulative potential	:	No data
Mobility in soil	:	No data
Hazardousness to the ozone layer	:	No data

13. Disposal Considerations

I obey a law about disposal of waste and the cleaning.
Because reuse is possible, I collect it and dissolve again and use aluminum. It occurs, and, depending on the kinds such as the fluxes that the dross which occurs when I dissolve aluminum was used when it dissolves of a wet atmosphere, discard a methane and ammonia gas in conformity with relations laws and ordinances because it is with management type industrial waste.

14. Transport Information

International regulation	:	Non-pertinence
Domestic regulation	:	Non-pertinence
Special safety measures in conjunction with the transportation	:	When I carry it by vehicles, I warn it not to collapse. In addition, I transport it with caution not to cause the water wets such as the rainwater during transportation.

15. Regulatory Information

Chemical substance discharge grasp management promotion law: I do not correspond
The Occupational Safety and Health Act: Dust obstacle Ordinance on Prevention
(* 54, trouble law 18) (when mine dust occurs)
The Occupational Safety and Health Act: Dangerous materials, an ignition-related thing
(the enforcement order separate table first second) (in the case of aluminum powder)
The poison dynamite control method: I do not correspond
The pneumoconiosis method: Law Article 2, enforcement regulations Article 2 separate table dust work

16. Other information

References

1) STN; SDS-OHS
2) NIOSH; The Registry of Toxic Effects of Chemical Substances (RTECS)(2009)
3) NLM; The Hazardous Substances Data Book (HSDB) (2009)
4) The Royal Society of Chemistry; The Dictionary of Substances and their Effects 2nd edition (DOSE) (1999)
5) The chemical article safety management data book supplementary revision second edition (2000)
6) Advices 2009 such as the Nihon Sangyo hygiene society permission density
7) ACGIH; Guide to Occupational Exposure Values 2009
8) "Aluminum and health" communication meeting (http://www.aluminum-hc.gr.jp)

Bibliography

1) "GHS classification guidance for companies" (2009 version) (Ministry of Economy, Trade and Industry)
2) "Training text (revised edition) of the SDS making technique of the mixture (chemical substance) by the GHS correspondence"
3) Classification methods such as chemical substances based on JIS Z7252(2014) GHS

Conformity standard	1)	Book D attached to transmission method - label of the dangerous noxious information of the chemical article based on JIS Z7253(2012) GHS, indication of the workshop and safe data sheet (SDS) -: Editing of the SDS and making

This data sheet was made from the document documents which obtained at present; contribute it as reference information to the last. In real use, please understand that it is necessary to have appropriate correspondence to the actual situation of the use stolen.