Safety Data Sheet

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1. IDENTIFICATION

Product name :	Aluminium paste 7667N
Manufacture :	TOYO ALUMINIUM K.K.
Address :	Midosuji Daiwa Bldg., 6-8, Kyutaromachi 3-chome, Chuo-ku, OSAKA, 541-0056, JAPAN
Section :	Quality Assurance Dept.
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Recommended uses :	Aluminium pigment for paint

2. HAZARD IDENTIFICATION

[Hazard Classification]

Physical Hazards	Not applicable	
Health Hazards	Skin corrosion or irritation	Category2
	Serious eye damage or eye irritation	Category2A
	Acute toxicity (inhalation)	Category4
	Specific target organ toxicity - single exposure	Category3 (respiratory irritation)
		Category3 (anesthetizing)
	Specific target organ toxicity - repeated exposure	Category2 (liver, testicle, central nervous system, lungs)
Environmental Hazards	Hazardous to the aquatic environment - acute	Category1
	Hazardous to the aquatic environment - chronic	Category1

Hazards that aren't written as the above are "Can't classify" or "Off the subject".

[GHS Label elements]

Pictogram

Signal word : Warning

H315 Causes skin irritation
H319 Causes serious eye irritation
H332 Harmful if inhaled
H335 May cause respiratory irritation
(respiratory irritation)
H336 May cause drowsiness or dizziness
(anesthetizing)
H373 May cause damage to organs through prolonged or repeated exposure
(liver, testicle, central nervous system, lungs)
H400 Very toxic to aquatic life
H410 Very toxic to aquatic life with long lasting effects

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P370+P378 In case of fire: Use metal fire powder for extinction.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.
P501 Dispose of contents/container in accordance with applicable regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Mixture: Mixture

Chemical name Aluminium pigment for paint

Chemical Name	Composition (%)	ENCS (Japan)	CAS
Aluminium flake	68 ～ 71	-	7429-90-5
Oleic acid	≦ 2	2-975	112-80-1
Kerosine (petroleum), hydrodesulfurized	20 ～ 25	9-1702	64742-81-0
Solvent naphtha (petroleum), light aromatic	5 ～ 10	9-1694	64742-95-6

4. FIRST-AID MEASURES

IF INHALED: Move victim to fresh air and keep at rest and get medical attention.

IF ON SKIN: Remove contaminated clothing/shoes, wash contaminated area with clean running water and soap. If inflammation or pain occurs, get medical attention/advice.

IF IN EYES: Immediately rinse with plenty of clean running water for 15 minutes or more and get medical attention/advice. Not rub victim's eyes. In the case victim wears contact lenses, remove them if possible.

IF SWALLOWED: Not force victim to vomit. If victim is consciousness, firstly rinse mouth with water. If victim feels badly, get medical attention/advice.

Protection of the person who gives the first aid: In case of inhalation, first aid provider should wear protective mask, in case of skin contact, wear protective equipment such as rubber gloves. Wear protective glasses if necessary.

Special precautions for medical doctor: Not specifically.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Powder extinguisher, carbon dioxide gas, dry sand, glass fiber clothing

Unsuitable extinguishing media: Water, extinguishing media containing water, halogen extinguishing media

Specific hazards: May generate irritative and/or toxic gas by fire. Burn if intensively heated. May cause extremely dangerous explosion especially in closed environment (building, ware house etc.). Package may explode by heat. Dust or fume may form explosive mixture gas with air. May ignite by friction, heat, spark or flame.

Specific fire-fighting method: Use powder extinguisher or carbon dioxide gas at early stage of fire where only solvent is burning. At the final stage of fire, aluminum powder will ignite and burn with white light with releasing large heat. Try smothering extinguishment by covering the origin of fire by dry sand, glass cloth at this stage of fire. Continue smothering extinguishment until aluminum get cold because inside may be still burning without flame even when it seems to be extinguished. Treat or transport burned aluminum powder after confirming the inside temperature did not rise after one day. Product that is not burning should be removed promptly to safe place.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Wear appropriate protective equipment (see 8. Exposure control/personal protection) and avoid contact with eye/skin and inhalation of gas/dust. If in doors, adequately ventilate until processing is complete.
Environmental precautions:	Do not release leakage to river or sewage directly.
Methods and materials for containment and cleaning up:	Stop leakage, if safe to do so. When leaked from the package wipe with cloth (waste cloth) and store in sealed package where no water, acid or alkali exists. Dispose of as industrial waste.
Prevention of secondary disaster:	Use equipment that do not cause spark.Avoid flowing into drainage, sewage or the basement and other closed places.

7. HANDLING AND STORAGE

[Handling]

Engineering measures: Install equipment described in "8. EXPOSURE CONTROLS/PERSONAL PROTECTION" for local exhaust/total ventilation.

Special precautions:
Do not handle until all the safety precautions have been read and understood.
Prohibit using high temperature material, spark or fire in surrounding area.
Do not eat, drink or smoke when using this product.
Wash the hands thoroughly after handling.
Avoid swallow and contact with skin.
Use only outdoors or in a well-ventilated area.
Do not breathe dust, fume, gas, mist, vapor, spray.
Install ventilation for exhaust to keep the concentration in the air below the exposure limit.
Avoid release to the environment.
In case package swells by abnormal inner pressure:
-Package with degassing bulb on lid;
Loosen the bulb gradually.
Open after reducing pressure to the atmosphere pressure.
-Package without degassing bulb on lid;
Hold the lid so that it will not fly and decrease pressure by gradually loosening handle lever and open.

[Storage]

Storage conditions:
In the store room, install the day lighting, lighting, and ventilating equipment needed for storing or handling the product.
Apply the fireproof structure to walls, pillars and floors of the storage room.
Use noncombustible material for beams.
For floors of the storage room, apply a structure that prevents water influx/infiltration.
Store away from ignition sources such as heat, spark or fire.-No smoking.
Store away from oxidizing agent.
Store in sealed container at fixed place where protection from light and ventilation are adequate and temperature (≦40℃) and humidity are appropriate.

Container material: Use containers specified by Fire Service Law or UN transport regulation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Administrative level, acceptable concentration limit

	Administrative level	Acceptable concentration limit	ACGIH
Aluminium flake	-	Inhalation dust 0.5mg/m3 Total dust 2mg/m3	TWA:1mg/m3(R) STEL: -
Kerosine (petroleum), hydrodesulfurized	-	-	TWA:525ppm STEL: -
Solvent naphtha (petroleum), light aromatic	-	-	TWA:25ppm STEL: -

【Facility measures】 Use explosion-proof electrical/ventilating/lighting equipment.
When dust/fume/mist/gas is generated at high temperature install ventilation equipment to keep concentration of air pollutant below administrative level/acceptable concentration limit.
Handle in the place where total ventilation is installed.
General proper ventilation is good for control the concentration in the air.

【Protective equipment】

Respiratory organ: In case ventilation is not adequate, wear appropriate respiratory protection.
Use personal respiratory protective equipment as required.

Hand: Use personal protective gloves as required.

Eye: Wear appropriate eye protection.

Skin and body: Wear appropriate face protection.
Use personal antistatic protective clothing and protective mask as required.

【Hygienic measures】 Wash the hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid (paste)
Color:	Silver-white
Odor:	Petroleum odor
Odor threshold:	N.A.
pH:	N.A.
Melting point/freezing point:	N.A.
Initial boiling point and boiling range:	If data is available, it is described below.
Flash point:	If data is available, it is described below.
Evaporation rate:	N.A.
Flammability:	Not applicable
Explosive limits:	If data is available, it is described below.
Vapor pressure:	If data is available, it is described below.
Vapor density:	N.A.
Relative density (calculated):	1.6
Solubility:	Insoluble
Partition coefficient: n-octanol/water:	N.A.
Auto-ignition temperature:	If data is available, it is described below.
Decomposition temperature:	N.A.
Viscosity:	N.A.

Components	Flash point(℃)	Ignition point(℃)	Initial boiling point(℃)	Boiling point(℃)	Vapour pressure	Density (Air=1)	Explosion limit(%)	
							Upper	Lower
Kerosine (petroleum), hydrodesulfurized	40～45(SETA Closed-cup)	Ca.245	130	130-200	Ca.5mmHg(20℃)	3-4	4.9	0.8
Solvent naphtha (petroleum), light aromatic	>40(Closed-cup)	-	155	155-180	-	4.2	6.5	0.5

10. STABILITY AND REACTIVITY

Stability:	Stable in air or under light shielded condition.
Hazardous/harmful reactivity:	React with water, acid, alkali, oxidizing agent metal oxide, halogen compound and generate hydrogen gas. Heat accelerates the reaction. Sealed container elevates inner pressure and may burst or the content may blow out and it is especially dangerous.
Conditions to avoid:	Organic solvent in the product may evaporate when temperature is elevated. Avoid contact with flame, spark, high temperature material and heating.
Incompatible materials:	Avoid contact with water, acid, alkali , oxidizing agent (peroxide, sulfuric acids etc), metal oxides (iron oxide etc.), halogen compounds (chlorine carbon hydrides).
Hazardous decomposition products:	May generate hydrogen gas.

11. TOXICOLOGICAL INFORMATION

Skin corrosion or irritation	Category 2 is more than 10% and classified as Category 2.
Serious eye damage or eye irritation	Category 2A is more than 10% and classified as Category 2A.
Acute toxicity (inhalation)	2500ppm<ATEmix≦5000ppm and classified as Category 4.
Specific target organ toxicity - single exposure	Category 3 is more than 20% and classified as Category 3. (respiratory irritation) Category 3 is more than 20% and classified as Category 3. (anesthetizing)
Specific target organ toxicity - repeated exposure	Category 2 is more than 1% and classified as Category 2. (liver,testicle,central nervous system,lungs)

12. ECOLOGICAL INFORMATION

Hazardous to the aquatic environment - acute	Category 1 is more than 25% and classified as Category 1.
Hazardous to the aquatic environment - chronic	Category 1 is more than 25% and classified as Category 1.

Ecotoxicity:

Crustacea	48h	LC50	0.42-2.3mg/L (Kerosine (petroleum), hydrodesulfurized)
Fish	48h	EC50	5.0-8.0mg/L (Solvent naphtha (petroleum), light aromatic)

Persistence and degradability:	No information at this point.
Bioaccumulation:	No information at this point.
Mobility in soil:	No information at this point.
Other hazards:	No information at this point.

13. DISPOSAL CONSIDERATIONS

Disposal:	Do not reuse empty package. Do not put sealed container in a flame. Do not weld or melt down.When dispose of waste product and empty container commission to legally approved industrial waste disposer.
Contaminated container and packing:	Confirm that there is not breakage, corrosion, leakage etc. of the package. Pile containers in a way that does not cause falling, tumbling or breakage. Put appropriate cover to avoid direct sunlight and penetration of rain. Transfer the container avoiding significant friction or shaking. Pack, label and transfer according to related regulations.

14. TRANSPORT INFORMATION

Land Transportation:	Comply with regulations.When the product significantly leak and there is a risk of fire during transportation take precautionary measures to prevent the fire and inform nearest fire service station.
Marine transportation:	Comply with regulations.
Air transportation:	Comply with regulations.
International regulation:	UN class : 9 UN number : 3077 Packing group Ⅲ Proper shipping name : Environmentally Hazardous Substance, Solid, N.O.S. Aluminium powder and petroleum mixture
Marine Pollutant:	Applicable

15. REGULATORY INFORMATION

Ensure this material is on compliance with federal requirements and ensure it is conformity to local regulations.

16. OTHER INFORMATION

References :

Guidance for safe handling of aluminum paste 2004, 2nd revision, Japan Aluminum Association, Aluminum paste committee

GHS of Classification and Labelling of Chemicals

Recommendations on the TRANSPORT OF DANGEROUS GOODS

Chemical Risk Information Platform, National Institute of Technology and Evaluation (NITE)

Safety Data Sheet is to provide reference information to assure the sage handling of the product. The descriptions herein are based on the currently available sources, information and data but no guarantee is given for its contents, physico-chemical properties, risk or hazard.The precautions herein are for normal handling.If you use this product under the special conditions, take safety measures appropriate for the special use and usage.