


SAFETY DATA SHEET

1. Product and company identification

Name of the chemical	Aluminum Silicon Alloy
Other means of identification	
SDS number	L64
Synonyms	AMC4632, AMC4632E, AMC4631, AMC4630, 4630, 4631, 4632E, 4632
Recommended use of the chemical and restrictions on use	
Recommended use	Industrial uses: Uses of substances as such or in preparations at industrial sites Manufacture of basic metals, including alloys Manufacture of computer, electronic and optical products, electrical equipment General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment Electricity, steam, gas water supply and sewage treatment Scientific research and development Other: Manufacture of medical and defense equipment
Recommended restrictions	Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers)
Manufacturer/Importer/Supplier/ Distributor information	Materion Aerospace Metals Composites
Address	1 R A E Road, Farnborough Hampshire, GU14 6XE United Kingdom
Telephone	+1.800.862.4118
E-mail	ehs@materion.com
Contact person	Theodore Knudson
Emergency telephone number	+1.800.862.4118

2. Hazards identification

Hazard classification	
Physical hazards	Not classified.
Health hazards	Sensitization, skin Category 1 Carcinogenicity Category 2 Specific target organ toxicity, repeated exposure Category 1 (Respiratory system)
Environmental hazards	Not classified.
Label elements	
Symbols	
Signal word	Danger
Hazard statement	May cause an allergic skin reaction. Suspected of causing cancer. Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment.
Response	Wash contaminated clothing before reuse.
Storage	Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards None known.

Supplemental information For further information, please contact the Product Stewardship Department at +1.216.383.4019.

3. Composition/information on ingredients

Mixture

Chemical properties	CAS Number	Concentration (%)
Aluminum	7429-90-5	71 - 87
Silicon	7440-21-3	9 - 24
Copper	7440-50-8	1.8 - 2.2
Iron	7439-89-6	1.6 - 2
Nickel	7440-02-0	0.7 - 1.1
Magnesium	7439-95-4	0.5 - 0.7

4. First aid measures

First aid measures for different exposure routes

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms and effects Prolonged exposure may cause chronic effects.

Personal protection for first-aid responders If exposed or concerned: get medical attention/advice. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Notes to physician Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media	Powder. Dry sand.
Extinguishing media to avoid	Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO ₂).
Specific hazards during fire fighting	During fire, gases hazardous to health may be formed.
Special fire fighting procedures	Move containers from fire area if you can do so without risk.
Protection of fire-fighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
General fire hazards	No unusual fire or explosion hazards noted.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions	Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.
Spill cleanup methods	Collect and dispose of spillage as indicated in section 13 of the SDS.

7. Handling and storage

Handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
Storage	Store in original tightly closed container.

8. Exposure controls/personal protection

Exposure limits

OELs. (Standards on Workplace Atmosphere of Dangerous and Hazardous Materials)

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	STEL	15 mg/m ³	Total dust.
		10 mg/m ³	Respirable dust.
	TWA	5 mg/m ³	Respirable dust.
		10 mg/m ³	Total dust.
Copper (CAS 7440-50-8)	STEL	2 mg/m ³	Dust and mist.
		0.6 mg/m ³	Fume.
	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Nickel (CAS 7440-02-0)	STEL	2 mg/m ³	
	TWA	1 mg/m ³	

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m ³	Respirable fraction.
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Nickel (CAS 7440-02-0)	TWA	1.5 mg/m ³	Inhalable fraction.

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear approved safety glasses, goggles, face shield and/or welder's helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.

Skin protection

Hand protection Wear gloves to prevent contact with particulate or solutions. Wear gloves to prevent metal cuts and skin abrasions during handling.

Other Protective overgarments or work clothing must be worn by persons who may become contaminated with particulate during activities.

Respiratory protection When airborne exposures exceed or have the potential to exceed the occupational exposure limits, approved respirators must be used as specified by an Industrial Hygienist or other qualified professional. Respirator users must be medically evaluated to determine if they are physically capable of wearing a respirator. Quantitative and/or qualitative fit testing and respirator training must be satisfactorily completed by all personnel prior to respirator use. Users of tight fitting respirators must be clean shaven on those areas of the face where the respirator seal contacts the face. Use pressure-demand airline respirators when performing jobs with high potential exposures such as changing filters in a baghouse air cleaning device.

Thermal hazards Not applicable.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

9. Physical and chemical properties

Appearance

Physical state Solid.
Form Solid.
Color Silver. Grey metallic.

Odor None.

Odor threshold Not applicable.

Melting point/freezing point > 1018.4 °F (> 548 °C) estimated / Not applicable.

pH	Not applicable.
Boiling point, initial boiling point, and boiling range	Not applicable.
Flammability (solid, gas)	Not applicable.
Flash point	Not applicable.
Decomposition temperature	Not applicable.
Auto-ignition temperature	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not applicable.
Explosive limit - upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Density	2.70 g/cm ³
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable.
Evaporation rate	Not applicable.
Other data	
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.
Viscosity	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.

Symptoms Prolonged exposure may cause chronic effects.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Carcinogenicity May cause cancer.

ACGIH Carcinogens

Aluminum (CAS 7429-90-5)

A4 Not classifiable as a human carcinogen.

Nickel (CAS 7440-02-0)

A5 Not suspected as a human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Nickel (CAS 7440-02-0)

2B Possibly carcinogenic to humans.

Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Causes damage to organs through prolonged or repeated exposure.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous.

Components		Species	Test Results
Copper (CAS 7440-50-8)			
Aquatic			
<i>Acute</i>			
Crustacea	EC50	Blue crab (<i>Callinectes sapidus</i>)	0.0031 mg/l
Fish	LC50	Fathead minnow (<i>Pimephales promelas</i>)	0.0219 - 0.0446 mg/l, 96 hours
Nickel (CAS 7440-02-0)			
Aquatic			
<i>Acute</i>			
Fish	LC50	Rainbow trout, donaldson trout (<i>Oncorhynchus mykiss</i>)	0.06 mg/l, 4 days

Persistence and degradability	Not available.
Bioaccumulation	Not available.
Mobility in soil	Not available.
Other hazardous effects	Not available.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Residual waste	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.
Local disposal regulations	Dispose in accordance with all applicable regulations.

14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

Applicable regulations

Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

Copper (CAS 7440-50-8)

Listed.

Nickel (CAS 7440-02-0) Listed.

Priority Management Chemical List (Regulations on Handling Priority Managed Chemicals), as amended

Magnesium (CAS 7439-95-4)

Nickel (CAS 7440-02-0)

Toxic Chemical Substances (TCS) List (EPA Toxic Substances Notice No. 0960095331E, Tables 1-3, Dec. 17, 2007, as amended)

Not listed.

Standards on Workplace Atmosphere of Dangerous and Hazardous Materials

Aluminum (CAS 7429-90-5) Listed.

Copper (CAS 7440-50-8) Listed.

Nickel (CAS 7440-02-0) Listed.

Hazardous Substances and Flammable Pressurized Gases Establishment Standards and Safety Control Regulations

Iron (CAS 7439-89-6) Class 2: Flammable Solids

Magnesium (CAS 7439-95-4) Class 2: Flammable Solids

Specified Hazardous Chemicals (Guidelines for Prevention of Danger Posed by Special Hazardous Chemicals (CLA No. 659306)

Nickel (CAS 7440-02-0) Class 3 Category C

GHS Classification List: GHS implementation phase 1, 2 and 3 (CLA No. 0980145063, 0990146707, and 1020146801)

Aluminum (CAS 7429-90-5)

Magnesium (CAS 7439-95-4)

Nickel (CAS 7440-02-0)

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information

References Not available.

Prepared by Not available.