SAFETY DATA SHEET

Pretreated and/or Painted Aluminum Extrusions (AAMA 2604, 2605)

Section 1. Identification

GHS product identifier : Pretreated and/or Painted Aluminum Extrusions (AAMA 2604, 2605)

Product code : Not available.

Other means of identification : 6XXX Series Alloys including: 6005, 6005A, 6060, 6061, 6063, 6082, 6105, 6181, 6351, 6360, 6463; Aluminum; Wrought Aluminum Products

Product type : Massive metal.
Not hazardous in solid form. If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

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

Product use : Various extruded and/or fabricated aluminum parts, products.

Area of application : Consumer applications, Industrial applications.

Manufacturer : **Bonnell Aluminum, Inc.**
54 Bonnell Lane, Carthage, TN 37030

Website: BonnellAluminum.com
Telephone no.:615-683-8291

Emergency telephone number (with hours of operation) : Chemtrec (North America): 1-800-424-9300 (24 hours)

Section 2. Hazards identification

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :

H334	RESPIRATORY SENSITIZATION - Category 1
H317	SKIN SENSITIZATION - Category 1
H350	CARCINOGENICITY - Category 1A
H360	TOXIC TO REPRODUCTION - Category 1A
H362	TOXIC TO REPRODUCTION - Effects on or via lactation
H372	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

United States

Section 2. Hazards identification

Hazard statements : H317 - May cause an allergic skin reaction.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.
H362 - May cause harm to breast-fed children.
H372 - Causes damage to organs through prolonged or repeated exposure. (blood system, brain, central nervous system (CNS), kidneys, lungs)

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P284 - Wear respiratory protection.
P260 - Do not breathe dust.
P263 - Avoid contact during pregnancy and while nursing.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash thoroughly after handling.

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.

Storage : P405 - Store locked up.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Hazards identified when used : No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : 6XXX Series Alloys including: 6005, 6005A, 6060, 6061, 6063, 6082, 6105, 6181, 6351, 6360, 6463; Aluminum; Wrought Aluminum Products

Ingredient name	Synonyms	%	Identifiers
silicon	-	≤3	CAS: 7440-21-3
Manganese	-	≤3	CAS: 7439-96-5
lead	-	≤1	CAS: 7439-92-1
Cobalt aluminate blue spinel	-	≤0.5	CAS: 1345-16-0
Cobalt titanite green spinel	-	≤0.5	CAS: 68186-85-6
Cobalt chromite blue green spinel	-	≤0.5	CAS: 68187-11-1
antimony nickel titanium oxide yellow	-	≤0.5	CAS: 8007-18-9
nickel	-	≤0.3	CAS: 7440-02-0
strontium chromate	-	≤0.3	CAS: 7789-06-2
cadmium sulfoselenide red	-	≤0.2	CAS: 58339-34-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Description of necessary first aid measures

Eye contact : Get medical attention.

Inhalation : Not applicable.

Skin contact : Wash with plenty of soap and water. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Cuts should be treated promptly and covered.

Ingestion : Not applicable.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Not applicable.

Inhalation : Not applicable.

Skin contact : May cause an allergic skin reaction.

Ingestion : Not applicable.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Extinguishing media

Suitable extinguishing media : Use approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone.

Unsuitable extinguishing media : Do not use water jet.
Halogen (HCFC) extinguisher.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides
Halides
hydrogen cyanide
hydrogen chloride

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Wear MSHA/NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Remark : Solid.: Non-combustible. Not considered to be a product presenting a risk of explosion.
Material in powder form, capable of creating a dust explosion.
Molten material reacts violently with water and can react with aluminum, tin, zinc and their alloys to generate flammable and explosive hydrogen gas.

Section 6. Accidental release measures

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : No specific hazard.

Methods and materials for containment and cleaning up

Small spill : Restack safely. Take care with items that are sharp or heavy or hot. Aluminum does not change color or glow when hot/heated.

Section 6. Accidental release measures

Large spill : Restack safely. Take care with items that are sharp or heavy or hot. Aluminum does not change color or glow when hot/heated. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Take care with items that are sharp or heavy or hot. Aluminum does not change color or glow when hot/heated.

Advice on general occupational hygiene : Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Storage temperature: room temperature. Store in accordance with local regulations. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
silicon	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 10 mg/m³. Form: Total. TWA 10 hours: 5 mg/m³. Form: Respirable fraction. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 15 mg/m³. Form: Total dust. TWA 8 hours: 5 mg/m³. Form: Respirable fraction. **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 5 mg/m³. Form: respirable fraction. TWA 8 hours: 10 mg/m³. Form: total dust.
Manganese	**ACGIH TLV (United States, 1/2025) [Manganese and inorganic compounds]** A4. TWA 8 hours: 0.02 mg/m³ (as Mn). Form: Respirable fraction. TWA 8 hours: 0.1 mg/m³ (as Mn). Form: Inhalable fraction. **NIOSH REL (United States, 10/2020) [manganese compounds and fume]** TWA 10 hours: 1 mg/m³ (as Mn). Form: Fume. STEL 15 minutes: 3 mg/m³ (as Mn). Form: Fume. **OSHA PEL (United States, 5/2018)** CEIL: 5 mg/m³ (as Mn). Form: Fume. **CAL OSHA PEL (United States, 1/2025)** STEL 15 minutes: 3 mg/m³ (as Mn). TWA 8 hours: 0.2 mg/m³ (as Mn).
lead	**ACGIH TLV (United States, 1/2025) [Lead and inorganic compounds]** A3. TWA 8 hours: 0.05 mg/m³ (as Pb). **NIOSH REL (United States, 10/2020)**

Section 8. Exposure controls/personal protection

	TWA 8 hours: 0.05 mg/m³. **OSHA PEL (United States, 5/2018) [Lead inorganic]** TWA 8 hours: 50 µg/m³ (as Pb). **CAL OSHA PEL (United States, 1/2025) [lead (metallic) and inorganic compounds, dust and fume]** TWA 8 hours: 0.01 mg/m³ (as Pb). Form: dust and fume.
Cobalt aluminate blue spinel	**ACGIH TLV (United States, 1/2025) [cobalt and inorganic compounds]** A3. Skin sensitizer , Inhalation sensitizer. TWA 8 hours: 0.02 mg/m³ (as Co).
Cobalt titanite green spinel	**ACGIH TLV (United States, 1/2025) [cobalt and inorganic compounds]** A3. Skin sensitizer , Inhalation sensitizer. TWA 8 hours: 0.02 mg/m³ (as Co). **ACGIH TLV (United States, 1/2025) [Nickel, insoluble inorganic compounds]** A1. TWA 8 hours: 0.2 mg/m³ (as Ni). Form: Inhalable fraction. **OSHA PEL (United States, 5/2018) [Nickel, metal and insoluble compounds]** TWA 8 hours: 1 mg/m³ (as Ni). **CAL OSHA PEL (United States, 1/2025) [nickel, insoluble compounds]** TWA 8 hours: 0.1 mg/m³ (as Ni).
Cobalt chromite blue green spinel	**ACGIH TLV (United States, 1/2025) [cobalt and inorganic compounds]** A3. Skin sensitizer , Inhalation sensitizer. TWA 8 hours: 0.02 mg/m³ (as Co). **NIOSH REL (United States, 10/2020) [chromium (III) compounds]** TWA 8 hours: 0.5 mg/m³ (as Cr). **OSHA PEL (United States, 5/2018) [Chromium (III) compounds]** TWA 8 hours: 0.5 mg/m³ (as Cr). **CAL OSHA PEL (United States, 1/2025) [chromium (iii) compounds]** TWA 8 hours: 0.5 mg/m³ (as Cr).
antimony nickel titanium oxide yellow	**ACGIH TLV (United States, 1/2025) [Nickel, insoluble inorganic compounds]** A1. TWA 8 hours: 0.2 mg/m³ (as Ni). Form: Inhalable fraction. **OSHA PEL (United States, 5/2018) [Nickel, metal and insoluble compounds]** TWA 8 hours: 1 mg/m³ (as Ni). **CAL OSHA PEL (United States, 1/2025) [nickel, insoluble compounds]** TWA 8 hours: 0.1 mg/m³ (as Ni).
nickel	**ACGIH TLV (United States, 1/2025)** A5. TWA 8 hours: 1.5 mg/m³. Form: Inhalable fraction. **NIOSH REL (United States, 10/2020) [nickel metal and other compounds]** NIA. TWA 10 hours: 0.015 mg/m³ (as Ni). **OSHA PEL (United States, 5/2018) [Nickel, metal**

Section 8. Exposure controls/personal protection

	and insoluble compounds] TWA 8 hours: 1 mg/m³ (as Ni). **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.5 mg/m³ (as Ni).
strontium chromate	**ACGIH TLV (United States, 1/2025)** A2. TWA 8 hours: 0.0005 mg/m³ (measured as Cr). **OSHA PEL Z2 (United States, 2/2013) [Chromic acid and chromates]** CEIL: 1 mg/10 m³. **NIOSH REL (United States, 10/2020) [chromic acid and chromates]** NIA. TWA 8 hours: 0.0002 mg/m³ (as Cr). **OSHA PEL (United States, 5/2018) [Chromium (VI) compounds]** TWA 8 hours: 0.005 mg/m³ (as Cr). **CAL OSHA PEL (United States, 1/2025)** TWA 8 hours: 0.0005 mg/m³ (as Cr).
cadmium sulfoselenide red	None.

Biological exposure indices

Ingredient name	Exposure indices
lead	**ACGIH BEI (United States, 1/2025) [lead and inorganic compounds]** BEI: 200 µg/l, lead [in blood]. Sampling time: not critical.
Cobalt aluminate blue spinel	**ACGIH BEI (United States, 1/2025) [cobalt and inorganic compounds including cobalt oxides]** BEI: 15 µg/l, not combined with tungsten carbide - cobalt [in urine]. Sampling time: end of shift at end of workweek. BEI: Nonquantitative: Biological monitoring should be considered for this compound based on the review; however, a specific BEI® could not be determined due to insufficient data., cobalt with tungsten carbide - cobalt [in urine]. Sampling time: end of shift at end of workweek.
Cobalt titanite green spinel	**ACGIH BEI (United States, 1/2025) [cobalt and inorganic compounds including cobalt oxides]** BEI: 15 µg/l, not combined with tungsten carbide - cobalt [in urine]. Sampling time: end of shift at end of workweek. BEI: Nonquantitative: Biological monitoring should be considered for this compound based on the review; however, a specific BEI® could not be determined due to insufficient data., cobalt with tungsten carbide - cobalt [in urine]. Sampling time: end of shift at end of workweek. **ACGIH BEI (United States, 1/2025) [nickel and inorganic compounds]** BEI: 30 µg/l, nickel [in urine after exposure to soluble compounds]. Sampling time: post-shift at end of workweek. BEI: 5 µg/l, nickel [in urine after exposure to

Section 8. Exposure controls/personal protection

	elemental nickel and poorly soluble compounds]. Sampling time: post-shift at end of workweek.
Cobalt chromite blue green spinel	**ACGIH BEI (United States, 1/2025) [cobalt and inorganic compounds including cobalt oxides]** BEI: 15 µg/l, not combined with tungsten carbide - cobalt [in urine]. Sampling time: end of shift at end of workweek. BEI: Nonquantitative: Biological monitoring should be considered for this compound based on the review; however, a specific BEI® could not be determined due to insufficient data., cobalt with tungsten carbide - cobalt [in urine]. Sampling time: end of shift at end of workweek.
antimony nickel titanium oxide yellow	**ACGIH BEI (United States, 1/2025) [nickel and inorganic compounds]** BEI: 30 µg/l, nickel [in urine after exposure to soluble compounds]. Sampling time: post-shift at end of workweek. BEI: 5 µg/l, nickel [in urine after exposure to elemental nickel and poorly soluble compounds]. Sampling time: post-shift at end of workweek.
nickel	**ACGIH BEI (United States, 1/2025) [nickel and inorganic compounds]** BEI: 30 µg/l, nickel [in urine after exposure to soluble compounds]. Sampling time: post-shift at end of workweek. BEI: 5 µg/l, nickel [in urine after exposure to elemental nickel and poorly soluble compounds]. Sampling time: post-shift at end of workweek.
cadmium sulfoselenide red	**ACGIH BEI (United States, 1/2025) [cadmium and inorganic compounds]** BEI: 5 µg/g creatinine, cadmium [in urine]. Sampling time: not critical. BEI: 5 µg/l, cadmium [in blood]. Sampling time: not critical.

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Not applicable.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location. Wash thoroughly after handling.

Section 8. Exposure controls/personal protection

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Use strong, cut-resistant gloves suitable for handling metals.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Not applicable.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid. [Massive solid.]

Color : Gray. / Silver. / Various (Based on paint pigment specified by customer.)

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point/freezing point : 593 to 704°C (1099.4 to 1299.2°F)

Boiling point or initial boiling point and boiling range : Not available.

Flash point : Not applicable.

Evaporation rate : Not applicable.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not applicable.

Vapor pressure : Not applicable.

Relative vapor density : Not applicable.

Relative density : 2.5 to 2.9

Density : 2.69 to 2.74 g/cm³

Solubility(ies) :

Media	Result
water	Not soluble

Miscible with water : No.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : Not applicable.

Decomposition temperature : Not available.

SADT : Not available.

Section 9. Physical and chemical properties

Viscosity : Dynamic (room temperature): Not applicable.
Kinematic (room temperature): Not applicable.
Kinematic (40°C (104°F)): Not applicable.

Particle characteristics

Median particle size : Not available.

Other information

Physical/chemical properties comments : No additional information.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Avoid dust generation.

Incompatible materials : Molten aluminum is reactive with water. Aluminum particles are reactive or incompatible with water, humidity, strong alkalis, strong acids, halogenated acids and strong oxidizing materials.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
silicon	**Rat - Oral - LD50** 3160 mg/kg	
Manganese	**Rat - Oral - LD50** 9 g/kg	
	Rat - Inhalation - LC50 Dusts and mists 5.14 mg/l [4 hours]	OECD [Acute Inhalation Toxicity-Fixed Dose Procedure]
lead	**Rat - Male, Female - Oral - LD50** >2000 mg/kg	OECD [Acute Oral toxicity - Acute Toxic Class Method]
	Rat - Male, Female - Dermal - LD50 >2000 mg/kg	OECD [Acute Dermal Toxicity]
	Rat - Male, Female - Inhalation - LC50 Dusts and mists >5.05 mg/l [4 hours]	OECD [Acute Inhalation Toxicity]
Cobalt aluminate blue spinel	**Rat - Male, Female - Inhalation - LC50 Dusts and mists** >5.06 mg/l [4 hours]	OECD [Acute Inhalation Toxicity - Acute Toxic Class (ATC) Method]

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Cobalt chromite blue green spinel	**Rat - Female - Oral - LD50** >5000 mg/kg	OECD 423 [Acute Oral toxicity - Acute Toxic Class Method]
	Rat - Male, Female - Inhalation - LC50 Dusts and mists >5.05 mg/l [4 hours]	OECD 436 [Acute Inhalation Toxicity - Acute Toxic Class (ATC) Method]
nickel	**Rat - Oral - LD50** >2000 mg/kg	
strontium chromate	**Rat - Oral - LD50** 811 mg/kg	
	Rat - Male, Female - Inhalation - LC50 Dusts and mists 0.27 to 0.51 mg/l [4 hours]	OECD [Acute Inhalation Toxicity]

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result
Manganese	**Rabbit - Skin - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
silicon	**Rabbit - Eyes - Mild irritant** Amount/concentration applied: 3 mg
Manganese	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Respiratory corrosion/irritation

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary [Product] : Dust : May cause sensitization by skin contact.

Respiratory

Conclusion/Summary [Product] : Dust : May cause sensitization by inhalation.

Germ cell mutagenicity

Section 11. Toxicological information

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Conclusion/Summary [Product] : Contains material which can cause cancer.
Dust (prolonged exposure): Can cause cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP
lead	-	2B	Reasonably anticipated to be a human carcinogen.
Cobalt aluminate blue spinel	-	2B	Reasonably anticipated to be a human carcinogen.
Cobalt titanite green spinel	-	1	Known to be a human carcinogen.
Cobalt chromite blue green spinel	-	2B	Reasonably anticipated to be a human carcinogen.
antimony nickel titanium oxide yellow	-	1	Known to be a human carcinogen.
nickel	-	2B	Reasonably anticipated to be a human carcinogen.
strontium chromate	+	1	Known to be a human carcinogen.
cadmium sulfoselenide red	-	1	-

Reproductive toxicity

Conclusion/Summary [Product] : Contains material which can impair fertility.
Dust (prolonged exposure): Possible risk of impaired fertility.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
Cobalt chromite blue green spinel	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (lungs) (inhalation) - Category 2
strontium chromate	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
Manganese	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (brain, lungs) - Category 1
lead	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), kidneys) (inhalation) - Category 1
Cobalt titanite green spinel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (lungs) (inhalation) - Category 1
Cobalt chromite blue green spinel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bone marrow, heart, lungs) (inhalation) - Category 2
nickel	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (respiratory tract) (inhalation) - Category 1
strontium chromate	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, kidneys, liver, lungs) - Category 1
cadmium sulfoselenide red	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Section 11. Toxicological information

Aspiration hazard

Not available.

Information on the likely routes of exposure

Not available.

Potential acute health effects

Eye contact : Not applicable.

Inhalation : Not applicable.

Skin contact : May cause an allergic skin reaction.

Ingestion : Not applicable.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary [Product] : Contains material that may cause target organ damage, based on animal data.
Dust : May cause damage to organs through prolonged or repeated exposure.

Section 11. Toxicological information

General : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility or the unborn child.
May cause harm to breast-fed children.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Pretreated and/or Painted Aluminum Extrusions (AAMA 2604, 2605)	13667.7	N/A	N/A	N/A	N/A
silicon	3160	N/A	N/A	N/A	N/A
Manganese	9000	N/A	N/A	N/A	5.14
lead	2500	2500	N/A	N/A	N/A
nickel	2500	N/A	N/A	N/A	N/A
strontium chromate	811	N/A	N/A	N/A	0.27
cadmium sulfoselenide red	100	N/A	N/A	3	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	
Manganese	**Acute - EC50 - Fresh water** Aquatic plants - Duckweed - *Lemna minor* 31 mg/l [4 days]	Effect: Growth
	Acute - LC50 - Fresh water Fish - Fathead minnow - *Pimephales promelas* 28 mg/l [96 hours]	Effect: Mortality
	Acute - LC50 - Fresh water Daphnia - Water flea - *Daphnia magna* 29 mg/l [48 hours]	Effect: Mortality
	Chronic - NOEC - Fresh water Daphnia - *Ceriodaphnia dubia* 1.7 mg/l [8 days]	OECD [Daphnia Magna Reproduction Test]
lead	**Acute - LC50 - Fresh water** Crustaceans - Water flea - *Ceriodaphnia reticulata* Age: <4 hours 530 µg/l [48 hours]	Effect: Mortality
	Acute - LC50 - Fresh water Fish - common carp - *Cyprinus carpio* - Juvenile (Fledgling, Hatchling, Weanling) Size: 3.5 cm 0.44 ppm [96 hours]	Effect: Mortality
		Effect: Accumulation

Section 12. Ecological information

	Chronic - NOEC - Fresh water Fish - common carp - *Cyprinus carpio* Age: 13 months; Size: 10.5 cm; Weight: 27.8 g 0.03 µg/l [4 weeks]	
	Acute - EC50 - Fresh water Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 20.5 µg/l [72 hours]	Effect: Population OECD
	Chronic - EC10 - Fresh water Algae - Green algae - *Raphidocelis subcapitata* - Exponential growth phase 3.9 µg/l [72 hours]	Effect: Population OECD
nickel	**Acute - EC50 - Fresh water** Aquatic plants - Duckweed - *Lemna minor* 450 µg/l [4 days]	Effect: Growth
	Chronic - NOEC - Marine water Algae - Dinoflagellate - *Glenodinium halli* 100 mg/l [72 hours]	Effect: Population
	Chronic - NOEC - Fresh water Fish - common carp - *Cyprinus carpio* Age: 13 months; Size: 10.5 cm; Weight: 27.8 g 3.5 µg/l [4 weeks]	Effect: Accumulation
	Acute - LC50 - Fresh water Crustaceans - Water flea - *Ceriodaphnia dubia* - Juvenile (Fledgling, Hatchling, Weanling) Age: 2 to 8 hours 34.6 µg/l [48 hours]	Effect: Mortality US EPA, OECD
	Chronic - EC10 Daphnia - Water flea - *Daphnia magna* - Neonate Age: <24 hours 6.9 µg/l [21 days]	Effect: Reproduction OECD
	Acute - LC50 - Fresh water Fish - Indian catfish - *Heteropneustes fossilis* 47.5 ng/l [96 hours]	Effect: Mortality

Conclusion/Summary [Product] : Not available.

Persistence and degradability

Conclusion/Summary [Product] : Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
cadmium sulfoselenide red	-	1345	High

Section 12. Ecological information

Mobility in soil

Soil/Water partition coefficient : Not available.

Other adverse effects

No known significant effects or critical hazards.

Section 13. Disposal considerations

This product, under the normal conditions of use, meets the definition of an "ARTICLE".
If dust or fumes are generated during processing (e.g., brazing, cutting, grinding, sawing, and welding) hazardous chemicals could be released.

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made in accordance with local and governmental regulations.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Additional information

DOT Classification : **Reportable quantity** 1111.1 lbs / 504.44 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Remarks Not Applicable when shipped as massive solid metal.

Special precautions for user : Not Applicable when shipped as massive solid metal.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 5(a)2 final significant new use rules**: mercury; Perfluorooctanoic acid

TSCA 6 final risk management: strontium chromate

TSCA 8(a) PAIR: 2-(2-ethoxyethoxy)ethyl acetate; bismuth vanadium tetraoxide

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): All components are active or exempted.

Clean Water Act (CWA) 307: zinc; Copper; chromium; lead; dimethyl phthalate; Cobalt titanite green spinel; Cobalt chromite blue green spinel; copper chromite black spinel; antimony nickel titanium oxide yellow; nickel; strontium chromate; chrome antimony titanium buff rutile; cadmium sulfoselenide red; chromium (III) oxide; trizinc bis (orthophosphate); Diiron zinc tetraoxide; zinc oxide; Zinc Ferrite Brown Spinel; mercury

Clean Water Act (CWA) 311: strontium chromate

TSCA 12(b) - Chemical export notification

	One time notification		Annual notification		
Name	**4**	**5**	**5(f)**	**6**	**7**
zinc	Not listed	Not listed	Not listed	Listed	Not listed
lead	Not listed	Not listed	Not listed	Listed	Not listed

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 1A
TOXIC TO REPRODUCTION - Effects on or via lactation
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Composition/information on ingredients

Section 15. Regulatory information

Name	%	Classification
magnesium, non flammable solid	≥1 - ≤5	SUBSTANCES AND MIXTURES, WHICH IN CONTACT WITH WATER, EMIT FLAMMABLE GASES - Category 3
silicon	≤3	FLAMMABLE SOLIDS - Category 2 EYE IRRITATION - Category 2B
Manganese	≤3	FLAMMABLE SOLIDS - Category 2 EYE IRRITATION - Category 2B SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
lead	≤1	CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION - Category 1A TOXIC TO REPRODUCTION - Effects on or via lactation SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Cobalt aluminate blue spinel	≤0.5	RESPIRATORY SENSITIZATION - Category 1B CARCINOGENICITY - Category 2
Cobalt titanite green spinel	≤0.5	RESPIRATORY SENSITIZATION - Category 1B SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Cobalt chromite blue green spinel	≤0.5	RESPIRATORY SENSITIZATION - Category 1B CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
antimony nickel titanium oxide yellow	≤0.5	CARCINOGENICITY - Category 1A
nickel	≤0.3	SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
strontium chromate	≤0.3	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 2 RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1A GERM CELL MUTAGENICITY - Category 2 CARCINOGENICITY - Category 1A TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
cadmium sulfoselenide red	≤0.2	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

SARA 313

United States

Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	Aluminum, non flammable solid	7429-90-5	≥80
	zinc	7440-66-6	≥1 - ≤5
	Manganese	7439-96-5	≤3
	Copper	7440-50-8	≤3
	lead	7439-92-1	≤1
	Cobalt aluminate blue spinel	1345-16-0	≤0.5
	Cobalt titanite green spinel	68186-85-6	≤0.5
	Cobalt chromite blue green spinel	68187-11-1	≤0.5
	antimony nickel titanium oxide yellow	8007-18-9	≤0.5
	nickel	7440-02-0	≤0.3
	strontium chromate	7789-06-2	≤0.3
	cadmium sulfoselenide red	58339-34-7	≤0.2
	mercury	7439-97-6	≤0.1
Supplier notification	Aluminum, non flammable solid	7429-90-5	≥80
	zinc	7440-66-6	≥1 - ≤5
	Manganese	7439-96-5	≤3
	Copper	7440-50-8	≤3
	lead	7439-92-1	≤1
	Cobalt aluminate blue spinel	1345-16-0	≤0.5
	Cobalt titanite green spinel	68186-85-6	≤0.5
	Cobalt chromite blue green spinel	68187-11-1	≤0.5
	antimony nickel titanium oxide yellow	8007-18-9	≤0.5
	nickel	7440-02-0	≤0.3
	strontium chromate	7789-06-2	≤0.3
	cadmium sulfoselenide red	58339-34-7	≤0.2
	mercury	7439-97-6	≤0.1

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: ALUMINUM; MAGNESIUM; ZINC; SILICON DUST; MANGANESE; COPPER

New York : The following components are listed: Zinc; Copper

New Jersey : The following components are listed: ALUMINUM; MAGNESIUM; ZINC; SILICON; MANGANESE; COPPER; LEAD; COBALT compounds; COBALT compounds; NICKEL compounds; NICKEL; STRONTIUM CHROMATE; CADMIUM COMPOUNDS

Pennsylvania : The following components are listed: MAGNESIUM; ZINC COMPOUNDS; SILICON; MANGANESE COMPOUNDS; COPPER FUME

California Prop. 65

⚠ **WARNING**: This product can expose you to chemicals including Lead, Chromium (hexavalent compounds) and perfluorooctanoic acid, which are known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including Nickel compounds, Nickel compounds, Nickel and Carbon black, which are known to the State of California to cause cancer, and Mercury and mercury compounds, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 15. Regulatory information

Ingredient name	No significant risk level	Maximum acceptable dosage level
Lead	Yes.	Yes.
Nickel compounds	-	-
Nickel compounds	-	-
Nickel	-	-
Chromium (hexavalent compounds)	Yes.	Yes.
Carbon black	-	-
Mercury and mercury compounds	-	-
perfluorooctanoic acid	-	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Ingredient name	List name	Status
Lead (Pb)	Heavy metals - Annex 1	Listed

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Effects on or via lactation	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

History

Date of issue/Date of revision : 02/27/2026

Date of previous issue : No previous validation

Version : 1

Prepared by : Sphera Solutions

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
LogPow = logarithm of the octanol/water partition coefficient

Section 16. Other information

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
TDG = Transportation of Dangerous Goods
UN = United Nations

References : HCS (U.S.A.) - Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

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