

SAFETY DATA SHEET



Aluminium Flake (Polymer coated)

ACCORDING TO OSHA HCS (29 CFR 1910.1200)

Date of Issue: 24/05/2023

Date of First Issue: 24/05/2023

Version: V1.0

SDS Code: 400_US_EN

SECTION 1: IDENTIFICATION

Product identifier

Product name

Aluminium Flake (Polymer coated)

Product code

PCF-200AG; PCF-400AG; PCF7130; PCF7150; PCF8160

Other Means of Identification

None Known

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

Identified Use(s)

Coatings, inks, colourants

Uses Advised Against

None known

Details of the supplier of the safety data sheet

Supplier

Toyal America Inc.
17401 South Broadway,
Lockport,
IL 60441 USA

Telephone

+1 815-740-3000

E-Mail (competent person)

sds@toyal.com

Emergency telephone number

Emergency Phone No.

+1-703-527-3887

Chemtrec

Languages spoken

English, Spanish

SECTION 2: HAZARD(S) IDENTIFICATION

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200

Physical hazards

Flammable solid, Category 1; H228

Health hazards

Serious eye damage/irritation, Category 1; H318

Environmental hazards

Hazardous to the aquatic environment, Acute, Category 2; H401

Hazardous to the aquatic environment, Chronic, Category 3; H412

Label elements

Hazard Pictogram(s)



Signal Word(s)

DANGER

Hazard Statement(s)

H228: Flammable solid.

H318: Causes serious eye damage.

H401: Toxic to aquatic life.

H412: Harmful to aquatic life with long lasting effects.

Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P240: Ground and bond container and receiving equipment.

P241: Use explosion-proof electrical equipment.

P273: Avoid release to the environment.

P280: Wear protective gloves/eye protection/face protection.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER/doctor.

P370+P378: In case of fire: Use dry powder to extinguish.

P501: Dispose of contents in accordance with local, state or national legislation.

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Other hazards

Danger of dust explosion.

Percent of the mixture consists of ingredient(s) of unknown acute toxicity:

0% of the mixture consists of ingredients of unknown acute inhaled toxicity.
0% of the mixture consists of ingredients of unknown acute oral toxicity.
0% of the mixture consists of ingredients of unknown acute dermal toxicity.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances - Not applicable

Mixtures Substances in preparations / mixtures

Classification: OSHA HCS (29 CFR 1910.1200)

Chemical identity of the substance	%W/W	CAS No.	EC No.	Hazard classification
Aluminium	≥ 85 - ≤ 90	7429-90-5	231-072-3	Flammable solid, Category 1; H228 Substances and mixtures which, in contact with water, emit flammable gases, Category 2; H261 Pyrophoric solid, Category 1; H250
2-Propenoic acid, homopolymer	≥ 9 - ≤ 15	9003-01-4	618-347-7	Acute toxicity, Category 4; H302 Serious eye damage/irritation, Category 1; H318 Specific target organ toxicity — single exposure, Category 3; H335 Hazardous to the aquatic environment, Acute, Category 1; H400 Hazardous to the aquatic environment, Chronic, Category 2; H411
Oleic acid	1	112-80-1	204-007-1	Not classified

SECTION 4: FIRST AID MEASURES



Description of first aid measures

Self-protection of the first aider

Use personal protective equipment as required. Wear appropriate personal protective equipment, avoid direct contact. Ensure adequate ventilation. Avoid exposure during pregnancy. Do not breathe vapour. Do not use mouth-to-mouth resuscitation.

Inhalation

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Apply artificial respiration only if patient is not breathing or under medical supervision. Call a POISON CENTER/doctor if you feel unwell.

Skin Contact

IF ON SKIN: Remove contaminated clothing and wash all affected areas with plenty of water. Contaminated clothing should be thoroughly cleaned. If skin irritation or rash occurs: Get medical advice/attention.

Eye Contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. In case of eye irritation consult an ophthalmologist.

Ingestion

IF SWALLOWED: Rinse mouth. Do not give anything by mouth to an unconscious person. Do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Immediately call a POISON CENTER/doctor.

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Most important symptoms and effects, both acute and delayed

Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

As appropriate for surrounding fire. Extinguish with dry sand or special powder for metal fire (Class D).

Unsuitable extinguishing Media

Do not use water jet. Direct water jet may spread the fire. Do not use halogenated agents. Do not use water, foam or dry agent (ABC-powder.)

Special hazards arising from the substance or mixture

Flammable solid. The aluminium particles will burn at a very high temperature as a mass of material or be potentially explosive if loosened and dispersed in air. Aluminium reacts with water, acids, or alkalis to form flammable hydrogen gas. In case of fire may be liberated: Metal oxide smoke, toxic

Advice for fire-fighters

Fight fire with normal precautions from a reasonable distance. Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Keep containers cool by spraying with water if exposed to fire. Avoid run off to waterways and sewers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Ensure suitable personal protection during removal of spillages. Eliminate sources of ignition. Shut off leaks if without risk. Avoid all contact. Ensure adequate ventilation. Avoid generation of dust. Avoid breathing dust.

Methods and material for containment and cleaning up

Cover drains. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Provided it is safe to do so, isolate the source of the leak. Take up mechanically, placing in appropriate containers for disposal. Treat the recovered material as prescribed in the section on waste disposal. Clean contaminated articles and floor according to the environmental legislation. Do not allow to enter drains, sewers or water courses. Avoid release to the environment. Spillages or uncontrolled discharges into watercourses must be alerted to the Environment Agency or other appropriate regulatory body.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Ensure operatives are trained to minimise exposures. Ensure adequate ventilation. Avoid generation of dust. Avoid breathing dust. Do not get in eyes, on skin, or on clothing. Avoid contact with heat and ignition sources. In case of inadequate ventilation wear respiratory protection. Do not ingest. Wear protective gloves/eye protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Take precautionary measures against static discharge. Use explosion-proof equipment. Use non-sparking tools. Usual measures for fire prevention.

Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Bund storage facilities to prevent soil and water pollution in the event of spillage. Store in a cool/low-temperature, well-ventilated (dry) place away from heat and ignition sources. Protect from moisture. Humidity penetration into closed containers may lead to pressure increase and possible bursting of the container

Storage temperature

Ambient temperatures.

Incompatible materials

Keep away from: Acids, strong bases, Strong Oxidizing agents and halogenated compounds. Protect from moisture.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

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SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Aluminum metal	13463-67-7	-	1	-	-	ACGIH, A4
Total Dust		-	15	-	-	OSHA
Respirable fraction		-	5	-	-	OSHA

Note: ACGIH: American Conference of Governmental Industrial Hygienists - Threshold limit values (TLV) 2021
OSHA Permissible Exposure Limit (PEL): Occupational Safety and Health Standards, 1910.1000 TABLE Z-1

Biological exposure indices

Not established.

Appropriate engineering controls

Ensure adequate ventilation or use appropriate containment. Atmospheric levels should be controlled in compliance with the occupational exposure limit. Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Guarantee that the eye flushing systems and safety showers are located close to the working place.

Individual protection measures, such as personal protective equipment (PPE)

Keep good industrial hygiene. Wear appropriate personal protective equipment, avoid direct contact. Remove contaminated clothing and wash it before reuse. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke at the work place. Avoid breathing mist/vapours/spray.

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled. The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Eye/face protection

Wear eye protection with side protection (EN166).



Skin protection



Hand protection:

Wear impervious gloves (EN374). Gloves should be changed regularly to avoid permeation problems. Breakthrough time of the glove material: refer to the information provided by the gloves' producer. Recommended: PVC / Nitrile rubber.

Body protection:

Wear impervious protective clothing, including boots, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection



Wear suitable respiratory protective equipment if exposure to levels above the occupational exposure limit is likely. Where an air-purifying respirator is suitable, use EN141 or EN143. Recommended: Filter type A (EN141) and Filter type P2 (EN143). Have available emergency self-contained breathing apparatus or full-face airline respirator when using this chemical.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Silver grey powder
Odor	Not available
Odor Threshold	Not available
pH	Not available
Melting Point/Freezing Point	660°C (1220°F)
Initial boiling point and boiling range	Not available

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Flash Point	Not available
Evaporation Rate	Not available
Flammability (solid, gas)	Flammable solid.
Upper/lower flammability or explosive limits	Not available
Vapour pressure	Not available
Vapour density	Not available
Relative density	2.7
Solubility(ies)	Not available
Partition coefficient: n-octanol/water	Not available
Auto-ignition temperature	Not available
Decomposition Temperature	Not available
Viscosity	Not available

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Stable under normal conditions
Chemical stability	Stable under normal conditions
Possibility of hazardous reactions	Reacts violently with halogenated hydrocarbons and oxidizing agents (Formation of: Heat). Humidity penetration into closed containers may lead to pressure increase and possible bursting of the container. Aluminium reacts with water, acids, or alkalis to form flammable hydrogen gas
Conditions to avoid	Keep away from heat, sources of ignition and direct sunlight.
Incompatible materials	Keep away from: Acids, strong bases, Strong Oxidizing agents and halogenated compounds .Protect from moisture.
Hazardous decomposition product(s)	May decompose in a fire giving off toxic fumes. Carbon monoxide, Carbon dioxide and aluminium oxide smoke.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects	
Acute toxicity - Ingestion	Mixture: Based upon the available data, the classification criteria are not met.
Acute toxicity - Skin Contact	Mixture: Based upon the available data, the classification criteria are not met.
Acute toxicity - Inhalation	Mixture: Based upon the available data, the classification criteria are not met.
Skin corrosion/irritation	Mixture: Based upon the available data, the classification criteria are not met.
Serious eye damage/irritation	Mixture: Serious eye damage/irritation, Category 1;H318: Causes serious eye damage.
2-Propenoic acid, homopolymer	Serious eye damage/irritation, Category 1;H318: Causes serious eye damage.
	Test Result: Adverse effects observed (Irreversible effects on the eye)
	Read across: Acrylic acid
	Source: EU Data ECHA registration dossier
Respiratory or skin sensitization	Mixture: Based upon the available data, the classification criteria are not met.
Germ cell mutagenicity	Mixture: Based upon the available data, the classification criteria are not met.
Carcinogenicity	Mixture: Based upon the available data, the classification criteria are not met.
Reproductive toxicity	Mixture: Based upon the available data, the classification criteria are not met.
STOT - single exposure	Mixture: Based upon the available data, the classification criteria are not met.
STOT - repeated exposure	Mixture: Based upon the available data, the classification criteria are not met.
Aspiration hazard	Mixture: Based upon the available data, the classification criteria are not met.
Information on likely routes of exposure	
Inhalation	Possible – accidental exposure
Ingestion	Possible – accidental exposure
Skin Contact	Possible – accidental exposure
Eye Contact	Possible – accidental exposure
Early onset symptoms related to exposure	Causes serious eye damage.
Delayed health effects from exposure	None Known

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Exposure levels and health effects

See Section: 8

Interactive effects

None Known

Other information

OSHA Designated Carcinogen
NIOSH Occupational Carcinogen List
NTP Report on Carcinogens
IARC Monographs

All chemicals are not listed
All chemicals are not listed
All chemicals are not listed
2-Propenoic acid, homopolymer: Group 3

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

Mixture:

Hazardous to the aquatic environment, Acute, Category 2; H402: Harmful to aquatic life.

Estimated Mixture LC50 >1 - <10 mg/l (Fish)

Hazardous to the aquatic environment, Chronic, Category 3; H412: Harmful to aquatic life with long lasting effects.

Estimated Mixture LC50 >10 - <100 mg/l (Fish)

2-Propenoic acid, homopolymer Hazardous to the aquatic environment, Acute, Category 1; H400: Very toxic to aquatic life.

LC50 (96h): >10-100 mg/L (Fish)

Hazardous to the aquatic environment, Chronic, Category 2; H411: Toxic to aquatic life with long lasting effects.

Persistence and degradability

There are no data available on the mixture itself.

Aluminium

The methods for determining the biological degradability are not applicable to inorganic substances.

2-Propenoic acid, homopolymer Degradation in water: 87.4% (28 days) OECD 301F
Readily biodegradable.

Oleic acid No data available

Bioaccumulative potential

There are no data available on the mixture itself.

Aluminium No data available

2-Propenoic acid, homopolymer No data available

Oleic acid Bioconcentration factor (BCF): 39.7 L/kg EpiSuite QSAR tool

Low bioaccumulation potential.

Mobility in soil

There are no data available on the mixture itself.

Aluminium No data available

2-Propenoic acid, homopolymer The substance is predicted to have high mobility in soil.

Oleic acid No data available

Other adverse effects

None known

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Dispose of wastes in an approved waste disposal facility. Recover or recycle if possible. Avoid release to the environment. Disposal should be in accordance with local, state or national legislation. Handle contaminated packages in the same way as the substance itself. Non-contaminated packages may be recycled.

SECTION 14: TRANSPORT INFORMATION

	Road/Rail (ADR/RID)	Sea transport (IMDG)	Air (ICAO/IATA)
UN number	UN1309	UN1309	UN1309
UN proper shipping name	ALUMINIUM POWDER, COATED	ALUMINIUM POWDER, COATED	ALUMINIUM POWDER, COATED
Transport hazard class(es)	4.1	4.1	4.1
Packing group	III	III	III
Environmental hazards	Not classified as Environmentally hazardous substance	Not classified as a Marine Pollutant.	Not classified as Environmentally hazardous substance

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Special precautions for user
Transport in bulk according to Annex II of MARPOL
73/78 and the IBC Code
Additional Information

See Section: 2
Not applicable
None

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal Regulations

TSCA Chemical Data Reporting (CDR) Rule	Aluminium: listed 2-Propenoic acid, homopolymer: listed Oleic acid: listed
NIOSH Occupational Carcinogen List	All chemicals are not listed
EPCRA Section 313	All chemicals are not listed
CWA 307- Toxic	All chemicals are not listed
CERCLA - Hazardous Substances	All chemicals are not listed
CWA Section 311 List of Hazardous Substances	All chemicals are not listed

US State Regulations

Proposition 65 (California)	All chemicals are not listed
Massachusetts, New Jersey, Pennsylvania, Rhode Island- State Right to Know Lists	Aluminium: listed Oleic acid: listed
New York -State Right to Know Lists	Aluminium: listed
Minnesota - State Right to Know Lists	Aluminium: listed
Massachusetts – Toxic Use reduction act	Aluminium: listed

Non-Regional

IARC Monographs	2-Propenoic acid, homopolymer: Group 3
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SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Not applicable – V1.0

Version V1.0
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Date of First Issue 24/05/2023

This Safety Data Sheet was prepared in accordance with US Regulation OSHA HCS (29 CFR 1910.1200)

References:

Classification of the substance or mixture in accordance with paragraph (d) of 29 CFR 1910.1200	Classification Procedure
Flammable solid, Category 1; H228	On basis of test data
Serious eye damage/irritation, Category 1; H318	Threshold Calculation
Hazardous to the aquatic environment, Acute, Category 2; H401	Summation Calculation
Hazardous to the aquatic environment, Chronic, Category 3; H412	Summation Calculation

LEGEND

ADR/RID	ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road / RID: Regulations concerning the international railway transport of dangerous goods
BCF	Bioconcentration factor (BCF)
CAS	CAS: Chemical Abstracts Service
DNEL	Derived No Effect Level
EC	EC: European Community

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EU	European Union
IATA	IATA: International Air Transport Association
ICAO/IATA	ICAO: International Civil Aviation Organization / IATA: International Air Transport Association
IMDG	IMDG: International Maritime Dangerous Goods
LTEL	Long Term Exposure Limit
NOEC	No Observed Effect Concentration
OECD	Organisation for Economic Cooperation and Development
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No Effect Concentration
UN	United Nations
vPvB	very Persistent and very Bioaccumulative

Hazard classification / Classification code:

Flammable solid, Category 1; H228
Pyrophoric solid, Category 1
Substances and mixtures which, in contact with water, emit flammable gases, Category 2
Acute toxicity, Category 4
Serious eye damage/irritation, Category 1
Specific target organ toxicity — single exposure, Category 3
Hazardous to the aquatic environment, Acute, Category 1
Hazardous to the aquatic environment, Acute, Category 2
Hazardous to the aquatic environment, Chronic, Category 2
Hazardous to the aquatic environment, Chronic, Category 3

Hazard Statement(s)

H228: Flammable solid.
H250: Catches fire spontaneously if exposed to air.
H261: In contact with water releases flammable gases.
H302: Harmful if swallowed.
H318: Causes serious eye damage.
H335: May cause respiratory irritation.
H400: Very toxic to aquatic life.
H401: Toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.
H412: Harmful to aquatic life with long lasting effects.

Training advice: Consideration should be given to the work procedures involved and the potential extent of exposure as they may determine whether a higher level of protection is required.

Disclaimers

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