Speedball Mid Fire

SAFETY DATA SHEET (SDS)

Version: 02
Date of Issue: February 25, 2025

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2024

Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name:	Speedball Mid Fire
Product Colors:	Living Coral, Orange Creamsicle, Gossamer Drift, Raspberry Fizz, Variegated Lapis, Storied Sage, Teal Agate, Blue Moss, Midnight Plum, Ethereal Blue, Coriander, Biscotti, Blackcurrant, Wisteria, Night Shade, Green Tourmaline, Buttermilk, Smoke, Blushing White, Blackened Cooper, Champagne Quartz, Jasper, Natural Opal, Lemon Drop
Product sizes:	2 fl. oz. (59.1 mL) - 128 fl. oz. (3.78 L)
Other Means of Identification:	None known
Product Description:	Colored liquid glaze formulations intended to be applied with a brush then placed in a kiln for glaze firing.

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

Relevant identified use(s): The product is intended for general (adults) arts and crafts purposes.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Speedball Art Products Company, LLC
2301 Speedball Rd
Statesville, NC 28677 USA
Business Phone: +1 (704) 838-1475
Email: customerservice@speedballart.com

1.4 Emergency telephone number

Emergency Telephone: Contact the local poison control centre.

Section 2 – Hazard(s) Identification

2.1. Classification of the substance or mixture

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2024

Physical	Health	Environment [a, b]
Not classified	Not classified	H401: Acute aquatic toxicity (Category 2) H411: Chronic aquatic toxicity (Category 2)

[a] This SDS applies to the product line, as such the environmental classifications listed do not pertain to all colors. It should be noted that some colors may present environmental concerns to a lesser degree (*i.e.*, Category 3 or 4) and some colors may present no concerns.

[b] Environmental hazards are outside the scope of OSHA; therefore, product classification for acute and chronic aquatic toxicity (Category 2) is not mandatory.

2.2. Label elements

Label Pictogram:

Signal Word: Warning

Hazard Statements & Precautions:

Acute aquatic toxicity (Category 2) (H401)	**Toxic to aquatic life with long lasting effects.**
Chronic aquatic toxicity (Category 2) (H411)	**P273:** Avoid release to the environment.
	P391: Collect spillage.
	P501: Dispose of contents/container in accordance with local, regional, national, and/or international regulation.

Supplemental Hazard Information: None

2.3. Other hazards

- Substances when carried in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of ADR provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. Should the single or inner packaging condition or provisions not be met, transportation restrictions will need to be revisited.
- No other hazards have been identified for this product.

Section 3 – Composition / Information on Ingredients

3.1 Substance

The product is a mixture and not a substance.

3.2 Mixture

Chemical Name	CAS No.	EC No.	% Concentration [a]	GHS Hazards
Crystalline silica (Quartz)	14808-60-7	238-878-4	≤22.4691%	H350: Carcinogenicity (Category 1) (Inhalation); H372: Specific target organ toxicity (repeated exposure, Category 1, lungs)
Cobalt carbonate	513-79-1	208-169-4	≤0.7550%	H317: Skin sensitization (Category 1); H334: Respiratory sensitization (Category 1); H341: Germ cell mutagenicity (Category 2); H350: Carcinogenicity (Category 1B) (Inhalation); H360F: Reproductive toxicity (Category 1B; may damage fertility); H400: Acute aquatic toxicity (Category 1); H410: Chronic aquatic toxicity (Category 1)
Zinc oxide	1314-13-2	215-222-5	≤6.7600%	H371: Specific target organ toxicity (single exposure, Category 2, gastrointestinal tract); H400: Acute aquatic toxicity (Category 1); H410: Chronic aquatic toxicity (Category 1))
Titanium dioxide	13463-67-7	236-675-5	≤4.2781%	H351: Carcinogenicity (Category 2) (Inhalation)
Feldspar	68476-25-5	270-666-7	≤15.6811%	H335: Specific target organ toxicity (single exposure, Category 3, respiratory irritation); H319: Eye Irritation (Category 2)

[a] Concentrations are calculated as a maximum across all products, rather than by color.

The other ingredients in the product are either considered non-hazardous or are below their respective GHS cut-off values/concentration limits in the final product and were therefore not disclosed in the SDS.

It should be noted that the product may contain quartz (CAS No.14808-60-7) and titanium dioxide (CAS No. 13463-67-7) which may be hazardous when inhaled. Given the nature and physical form of the product (*i.e.*, liquid glaze) airborne respirable particles would not likely be released from the product and therefore the hazard is not relevant to the product.

Assessment of this product was based on the assumption that the glaze will not be sanded after it has been fired in the kiln.

Section 4 – First Aid Measures

4.1 Description of first aid measures

Eye contact: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and immediately flush eyes with water. If eye irritation persists, contact medical advise/attention.

Skin contact: No specific first aid measures are required. If irritation occurs, wash with plenty of water and soap. Take off contaminated clothing. If skin irritation persists: Get medical advice/attention.

Inhalation: No specific first aid measures are required. Inhalation route of exposure is not anticipated with intended use. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Seek medical attention if in doubt.

Ingestion: No specific first aid measures are required. Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention if in doubt.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to **Section 11 - Toxicological Information**.

4.3 Indication of any immediate medical attention and special treatment needed

- Not required.

Section 5 – Fire Fighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media: Use extinguishing media suitable for surrounding area if material is involved in a fire (e.g., water fog, foam, dry chemical or carbon dioxide).

Unsuitable Extinguishing Media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

- Irritating vapours or fumes may form if product is involved in fire:
- Also see **Section 10 - Stability and Reactivity**.

5.3 Advice for firefighters

- Wear a self-contained breathing apparatus to protect against potentially irritating vapours or fumes.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment (PPE) and emergency procedures

Personal Precautions: Ventilate area if spilled in confined space or other poorly ventilated areas. Observe PPE advice in **Section 8 – Exposure Controls/Personal Protection**.

Emergency Procedures: No specific precautions required. Keep unauthorized personnel away.

6.2 Environmental precautions:

- Prevent entry and contact with soil, drains, sewers, and waterways. Collect spillage. Inform relevant local/regional/national/international authorities. Prevent further leakage or spillage if it is safe to do so.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures: Contain spill if safe to do so. Collect recoverable product and place in a designated container for recycle and/or disposal. Ventilate contaminated area thoroughly. Dispose of contents/container in accordance with local/regional/national/international regulations.

6.4 Reference to other sections

- Refer to **Section 8 - Exposure Controls/Personal Protection** and **Section 13 – Disposal Considerations**.

Section 7– Handling and Storage

7.1 Precautions for safe handling

- Wash hands thoroughly after handling.
- Wash contaminated clothing before reuse.
- Employees should be trained in the safe use and handling of chemical materials.
- Refer to **Section 8 - Exposure Controls/Personal Protection**.

7.2 Conditions for safe storage, including any incompatibilities

- Keep container tightly closed to avoid spills.
- Keep in a cool dry place.

7.3 Specific end use(s)

- Refer to **Section 1.2 - Relevant identified uses**.

Section 8– Exposure Controls / Personal Protection

8.1 Control Parameters:

Occupational exposure limits: Only vapours were considered to be foreseeable under conditions of normal use. Airborne particles, such as dust, are not foreseeable under conditions of normal use.

Chemical Name	CAS No.	ACGIH TLVs TWA	OSHA PELs TWA	NIOSH RELs TWA	DFG MAK TWA
Silica, crystalline, mixed respirable (quartz, cristobalite, tridymite)	14808-60-7	0.025 mg/m^3 [a]	0.05 mg/m^3	0.05 mg/m^3	N/A
Titanium dioxide	13463-67-7	10 mg/m^3 [a]	15 mg/m^3 [b]	N/A	0.3 mg/m^3 **R** [c]
Zinc oxide, dust & fume	1314-13-2	2 mg/m^3 [a]	5mg/m^3	5 mg/m^3	0.1 mg/m3 **R**

N/A – Not applicable
R – Measured as respirable fractions of the aerosol

[a] Respirable particulate matter
[b] Total dust
[c] Multiplied with the material density

Note: Titanium dioxide (CAS No. 13463-67-7) values listed above are related to non-ultrafine and non-nanoscale or finescale particles

8.2 Exposure Controls:

Appropriate engineering controls

- No special requirements under ordinary conditions of use and with adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required.

8.3 Personal Protective Equipment

Note: Consider the concentration and amount of product at the workplace when selecting PPE. Use protective equipment as required.

Respiratory: Under normal conditions of use, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

Eyes/Face: If contact is likely, safety glasses with side shields are recommended.

Hands: Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur, wear chemically protective gloves.

Body/Skin:	Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material.
Thermal Hazards:	None known.
Environmental Exposure Controls:	Not available.
Hygiene measures:	Observe good industrial hygiene practices. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace and should be washed before reuse. When using the product do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Note: The data below are typical values and do not constitute a specification.

Appearance:			
Physical state:	Liquid	**Partition Coefficient**	
Colour:	**See section 1.1**	**n-octanol/water:**	Not available
Odour/Odour threshold:	Not available	**Auto-ignition temperature:**	Not available
pH (as supplied):	7 - 8	**Decomposition temperature:**	Not available
Melting/freezing point:	Not available	**Dynamic viscosity:**	Not available
Boiling point/range:	Not available	**Molecular weight:**	Not available
Flash point:	Not available	**Taste:**	Not available
Evaporation rate:	Not available	**Explosive properties:**	Not available
Flammability:	Not available	**Oxidizing properties:**	Not available
Upper/lower explosive limits:	Not available	**Surface tension:**	Not available
Vapor pressure:	Not available	**Volatile component:**	Not available
Water solubility:	Not available	**Gas group:**	Not available
Vapor density (Air = 1):	Not available	**pH (as solution):**	Not available
Specific gravity (Water = 1):	Not available	**VOC:**	Not available
Relative density:	Not available	**Particle size range:**	Not available

9.2 Other information

- No further data available.

Section 10 – Stability and Reactivity

10.1 Reactivity

- This material is not considered to be reactive under normal handling and storage conditions.

10.2 Chemical stability

- This material is considered stable under normal handling and storage conditions.

10.3 Possibility of hazardous reactions

- Not expected to occur under normal handling and storage conditions.

10.4 Conditions to avoid

- Exposure to high temperatures.
- Strong acids.
- Strong bases.
- Strong oxidisers.

10.5 Incompatible materials

- Strong acids.
- Strong bases.
- Strong oxidisers.
- Strong reducing agents.

10.6 Hazardous decomposition products

- Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids.

Section 11 – Toxicological Information

11.1. Information on hazard classes:

Likely routes of exposure: Skin contact.
Potential signs and symptoms: None expected under conditions of normal use.

Acute oral toxicity:	The product is practically non-toxic based on available animal and human use data. The oral ATE for the whole product is >5000 mg/kg.
Acute dermal toxicity:	The product is practically non-toxic based on available animal and human use data. The dermal ATE for the whole product is ATE >5000 mg/kg.
Acute inhalation toxicity:	The product is practically nontoxic based on available animal and human use data. The inhalation ATE for the whole product is >5 mg/L.
Skin corrosion/irritation:	The ingredients of this product at >1% are not corrosive to the skin or skin irritants based on human and/or animal studies.
Serious eye damage/irritation:	Feldspar (CAS No. 68476-25-5) has been classified for eye irritation (Category 2). Product classification is not warranted for eye irritation based on a review of available data. The other ingredients in this product >1% are not damaging to the eyes or eye irritants based on human and/or animal studies.
Respiratory or skin sensitization:	Cobalt carbonate (CAS No. 513-79-1) has been classified for skin and respiratory sensitization (Category 1). Product classification is not warranted for skin sensitization given the concentration of cobalt carbonate in the product and a review of available data. Product classification is not warranted for respiratory sensitization given the nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in this product at >0.1% are not sensitizing to the skin based on human and/or animal studies.
Mutagenicity:	Cobalt carbonate (CAS No. 513-79-1) has been classified for germ cell mutagenicity (Category 2). Product classification is not warranted for mutagenicity based on nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in the product at >0.1% are not mutagenic based on animal studies or no data identified for the ingredients in this product.
Carcinogenicity:	Quartz (silicon dioxide) (airborne, unbound particles of respirable size) (CAS No. 14808-60-7) has been classified for carcinogenicity (Category 1). Quartz (silicon dioxide) [listed as silica dust, crystalline, in the form of quartz or cristobalite (CAS No. 14808-60-7)] is listed as a carcinogen by IARC, NTP and ACGIH. Titanium dioxide (airborne, unbound particles of respirable size) (CAS No. 13463-67-7) has been classified for carcinogenicity (Category 2). Titanium dioxide (airborne, unbound particles of respirable size) (CAS No. 13463-67-7) is listed as a carcinogen by IARC and ACGIH. Product classification is not warranted for carcinogenicity based on nature and physical form of the product (*i.e.*, liquid glaze). Cobalt carbonate (CAS No. 513-79-1) has been classified for carcinogenicity (Category 1). Product classification is not warranted for carcinogenicity based on nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in the product >0.1% are not carcinogenic based on animal studies or no data identified for the ingredients in this product.

Reproductive Toxicity:	Cobalt carbonate (CAS No. 513-79-1) has been classified for reproductive toxicity (Category 1B, may damage fertility). Product classification is not warranted for reproductive toxicity given the concentration of cobalt carbonate in the product and a review of available data. The other ingredients in the product at >0.1% are not reproductive toxicants based on animal studies or no data identified for the ingredients in this product.
Specific target organ toxicity (single exposure):	Zinc oxide (CAS No. 1314-13-2) has been classified for specific target organ toxicity (single exposure, Category 2; may cause irritation to the gastrointestinal tract through oral exposure). Product classification is not warranted for gastrointestinal irritation given the concentration of zinc oxide in the product and a review of available data. Feldspar (CAS No. 68476-25-5) has been classified for specific target organ toxicity (single exposure, Category 3; may cause respiratory irritation). Product classification is not warranted for this effect based on a review of available data and the nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in this product >1% are not specific target organ toxicity (single exposure) hazards based on animal studies or no data identified for the ingredients in this product
Specific target organ toxicity (repeated exposure):	Quartz (silicon dioxide) (CAS No. 14808-60-7) has been classified for specific target organ toxicity (repeated exposure, Category 1; causes damage to lungs through prolonged or repeated exposure *via* inhalation). Product classification is not warranted for this effect given the nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in this product >1% are not specific target organ toxicity (repeated exposure) hazards based on available information, human and/or animal studies.
Aspiration hazard:	The ingredients in the product at >1% are not aspiration hazards based on animal studies or no data identified for the ingredients in this product.

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

IARC (International Agency for Research on Cancer). 2025. Agents Classified by the IARC Monographs, Volumes 1–129. https://monographs.iarc.who.int/list-of-classifications/

NTP (National Toxicology Program). 2021. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc15

Official Journal of the European Union. 2008. Regulation (EC) No 1272/2008. http://data.europa.eu/eli/reg/2008/1272/2022-03-01

Section 12 – Ecological Information

12.1 Toxicity

- Environmental hazards are outside the scope of OSHA. Based on the criteria outlined in the 10th revision of the GHS, the product is classified for acute and chronic aquatic toxicity (Category 2).

Chemical Name	CAS No.	Species	Result
Cobalt carbonate	513-79-1	*Oncorhynchus mykiss*	LC_{50}: 0.8 mg Co/L
		Ceriodaphnia dubia	LC_{50}: 0.61 mg Co/L
		Dendraster excentricus	LC_{50}: 2.32 mg Co/L
		Pseudokirchneriella subcapitata	EC_{50}: 95 µg Co/L - 486 µg Co/L
			EC_{10}: 22.0 µg Co/L - 297 µg Co/L
		Champia parvula	EC_{50}: 24.1 µg Co/L
			EC_{10}: 1.23 µg Co/L
		Skeletonema costatum	EC_{50}:100,000 µg Co/L
		Dunaliella tertiolecta	EC_{10}: 11,961 µg Co/L

Zinc oxide	1314-13-2	*Danio rerio*	LC_{50} (96h): 1.55 mg/L (bulk ZnO) nominal EC_{50} (84h): 2.066 mg/L (bulk ZnO) nominal
		Danio rerio	EC_{50} (48h): > 5 - < 16.2 mg/L (bulk ZnO) nominal
		Daphnia magna	EC_{50} (48h): >1.4 - <2.5 mg/L nominal
		Daphnia magna	EC_{10} (72h): 0.42 mg/L nominal

12.2 Persistence and degradability

- No data available for the ingredients of the product.

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in Soil

- No data available.

12.5 Results of PBT and vPvB assessment

- No data available.

12.6 Other adverse effects

- No further data available.

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

Section 13 – Disposal Considerations

13.1 Waste treatment methods

Preparing wastes for disposal: Use product for its intended purpose or recycle if possible. Dispose of waste in accordance with local, regional, national, and/or international regulations. The empty container has residues which may exhibit hazards of the product.

Contaminated Packaging: Container packaging is not expected to exhibit hazards.

Section 14 – Transport Information

Note: This product is not regulated as dangerous goods for transport. Substances when carried in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of ADR provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. Should the single or inner packaging condition or provisions not be met, transportation restrictions will need to be revisited. Review classification requirements before shipping materials at elevated temperatures.

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es):	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	None
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not applicable

Special precautions for use: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15 – Regulatory Information

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

Note: The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in **Section 3 – Composition / Information on Ingredients**.

United States

Federal Regulations:

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):

Chemical Name	CAS No.	CERCLA RQ
Formaldehyde	50-00-0	100 lbs
1,4-Dioxane	123-91-1	100 lbs
Ethylene oxide	75-21-8	10 lbs
Lead	7439-92-1	10 lbs
Mercury	7439-97-6	1 lbs
Cadmium	7440-43-9	10 lbs

No other ingredients in this product >0.1% are subject to reporting under CERCLA.

Clean Water Act (CWA): Lead (CAS No. 7439-92-1), mercury (CAS No. 7439-97-6) and cadmium (CAS No. 7440-43-9), and chromium (listed as chromium) (CAS No. 7440-47-3) are listed as toxic pollutants. No other ingredients in this product are listed as toxic pollutants.

Clean Air Act (CAA): Ethylene oxide (CAS No. 75-21-8) is listed by the CAA with a threshold quantity of 10,000 lbs. Formaldehyde (CAS No. 50-00-0) is listed by the CAA with a threshold quantity of 15,000 lbs. No other ingredients in this product are listed under the CAA.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA 302 Ingredients: Ethylene oxide (CAS No. 75-21-8) has a reporting quantity of 1,000 lbs in accordance with S.302. Formaldehyde (CAS No. 50-00-0) has a reporting quantity of 500 lbs in accordance with S.302. No other ingredients in this product are subject to reporting requirements of S.302.

SARA 304 Emergency Release Notification: Ethylene oxide (CAS No. 75-21-8) has a reporting quantity of 10 lbs in accordance with S.304. Formaldehyde (CAS No. 50-00-0) has a reporting quantity of 100 lbs in accordance with S.304. No other ingredients in this product are subject to reporting requirements of S.304.

SARA 311/312 Hazards: None.

SARA 313 Ingredients: Aluminum oxide (fibrous forms) (CAS No. 1344-28-1), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (CAS No. 7439-97-6), cadmium (CAS No. 7440-43-9), cobalt oxide (CAS No. 1308-06-1), vanadium oxide (CAS No. 1314-62-1), and formaldehyde (CAS No. 50-00-0) are subject to reporting requirements of S.313. No other ingredients in this product are subject to reporting requirements of S.313.

Toxic Substances Control Act (TSCA): Colemanite (CAS No. 1318-33-8), ulexite (CAS No. 1319-33-1), tremolite (non-asbestos) (CAS No. 14567-73-8), spodumene (CAS No. 66057-55-4), wollastonite (CAS No. 13983-17-0), methanol, (1H,3H,5H-oxazolo[3,4-c]oxazol-7a(7H)-ylmethoxy)- (CAS No. 59720-42-2), 5-hydroxypoly (methyleneoxy (74% C2, 21% C3, 4% C4, 1% C5) methyl-1-aza-3, 7-dioxabicyclo- (3.3.0) octane (CAS No. 56709-13-8), and nepheline syenite (Nepheline Syenite – various grades) (CAS No. 37244-96-5) are not listed on the TSCA inventory. All other ingredients are listed on the non-confidential TSCA inventory or are exempt.

State Regulations:

California Candidate Chemicals List: Cobalt carbonate (CAS No. 513-79-1), crystalline silica (listed as silica dust, crystalline, in the form of quartz or cristobalite) (CAS No. 14808-60-7), titanium dioxide (airborne particles of respirable size) (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (CAS No. 7439-97-6), cadmium (CAS No. 7440-43-9), hexavalent chromium [listed as chromium (VI] (CAS No. 18540-29-9), cobalt oxide (listed as cobalt [II] oxide) (CAS No. 1307-96-6), and vanadium oxide (listed as vanadium pentoxide) (CAS No. 1314-62-1) are listed on California's Candidate Chemicals List. No other ingredients in this product are listed on the Candidate Chemicals List.

California Proposition 65 List: Crystalline silica (airborne particles of respirable size) (CAS No. 14808-60-7) and titanium dioxide (airborne particles of respirable size) (CAS No. 13463-67-7) are listed on the Proposition 65 List; however, given the nature/physical form of the product (*i.e.*, liquid glaze), airborne respirable particles would not likely be released from this product and therefore the listed forms of titanium dioxide and crystalline silica are not relevant for the product. Formaldehyde [formaldehyde (gas)] (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (also listed as lead and lead compounds) (CAS No. not specified), mercury (listed as mercury and mercury compounds) (CAS No. not specified), cadmium (also listed as cadmium and cadmium compounds) (CAS No. 7440-43-9), hexavalent chromium [listed as chromium (hexavalent compounds)] (CAS No. not specified), cobalt oxide (listed as cobalt [II] oxide) (CAS No. 1307-96-6), and vanadium oxide [listed as vanadium pentoxide (orthorhombic crystalline form)] (CAS No. 1314-62-1) are listed on the Proposition 65 List. Warnings for the purpose of California Proposition 65 for cobalt oxide and vanadium oxide are not warranted given the nature/physical form of the product (*i.e.*, liquid glaze). Additionally, a screening assessment indicates that the concentrations of 1,4-dioxane, ethylene oxide, lead, mercury, cadmium, and hexavalent chromium are not expected to be a cause for concern and warnings for the purpose of California Proposition 65 are not required.

Maine List of Chemicals of High Concern: Given the product is not considered to be a toy and is not intended for use by children, the List of Chemicals of High Concern is not applicable to the product.

Massachusetts Toxic or Hazardous Substance List: Crystalline silica (CAS No. 14808 60-7), formaldehyde (CAS No. 50-00-0), cadmium (listed as cadmium and cadmium compounds) (CAS No. 7440-43-9), and hexavalent chromium (CAS No. not specified) are listed on the Toxic or Hazardous Substance List. No other ingredients in this product are listed on the Toxic or Hazardous Substance List.

Minnesota Chemicals of High Concern List and Priority List: Cobalt carbonate [listed as cobalt(II) carbonate] (CAS No. 513-79-1), crystalline silica [listed as silica, crystalline (respirable size)] (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (listed as lead subacetate) (CAS No. 1335-32-6), mercury (CAS No. 7439-97-6), cadmium (CAS No. 7440 43-9), hexavalent chromium [listed as chromium(VI)] (CAS No. 18540-29-9), cobalt oxide (listed as cobalt [II] oxide) (CAS No. 1307-96-6), and vanadium oxide [listed as vanadium pentoxide (orthorhombic crystalline form)] (CAS No. 1314-62-1) are listed on the Chemicals of High Concern and Priority list. No other ingredients in this product are listed on the Chemicals of High Concern and Priority list.

New Jersey Right to Know Hazardous Substance List: Kaolinite (listed as kaolin) (CAS No. 1332-58-7), iron oxide (CAS No. 1309-37-1), aluminum oxide (CAS No. 1344-28-1), silicon carbide (CAS No. 409-21-2), glyoxal (CAS No. 107-22-2), borates (listed as borate compounds (CAS No. not specified), crystalline silica (listed as silica, quartz) (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (mercury, elemental and inorganic compounds) (CAS No. 7439-97-6), cadmium (CAS No. 7440 43-9), hexavalent chromium (listed as chromium VI compounds) (CAS No. not specified), cobalt oxide (listed as cobalt compounds) (CAS No. not specified), and vanadium oxide (listed as vanadium pentoxide) (CAS No. 1314-62-1) are listed on the Right to Know Hazardous Substance List. No other ingredients are listed on the Right to Know Hazardous Substance List.

Pennsylvania Hazardous Substance List: Kaolinite (listed as kaolin) (CAS No. 1332-58-7), iron oxide (CAS No. 1309-37-1), aluminum oxide (CAS No. 1344-28-1), silicon carbide (CAS No. 409-21-2), silicon dioxide, amorphous (listed as silica) (CAS No. 7631-86-9), crystalline silica [listed as quartz (SiO_2)] (CAS No. 14808-60-7), titanium dioxide [listed as titanium oxide (TiO_2)] (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (listed as oxirane) (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (mercury, elemental and inorganic compounds) (CAS No. 7439-97-6), cadmium (CAS No. 7440 43-9), hexavalent chromium [listed as chromium, ion (Cr^{6+})] (CAS No. 18540-29-9), cobalt oxide (listed as cobalt) (CAS No. 7440-48-4), and vanadium oxide [listed as vanadium oxide (V_2O_5)] (CAS No. 1314-62-1) are listed on the Hazardous Substance List. No other ingredients in this product are listed on the Hazardous Substance List.

Vermont Chemicals of High Concern to Children: Given the product is not considered to be a toy and is not intended for use by children, the Chemicals of High Concern to Children list is not applicable to the product.

Washington Chemicals of High Concern to Children: Given the product is not considered to be a toy and is not intended for use by children, the Chemicals of High Concern to Children list is not applicable to the product.

International:

IARC: Crystalline silica (listed as silica dust, crystalline, in the form of quartz or cristobalite) (CAS No. 14808-60-7), formaldehyde (CAS No. 50-00-0), ethylene oxide (CAS No.75-21-8), cadmium (listed as cadmium and cadmium compounds) (CAS No. 7440-43-9), and hexavalent chromium (listed as chromium, metallic) (CAS No. 7440-47-3) are listed as Group 1, carcinogenic to humans. Silicon carbide (CAS No. 409-21-2) is listed as Group 2A, probably carcinogenic to humans. Titanium dioxide (CAS No. 13463-67-7), 1,4-dioxane (CAS No. 123-91-1), lead (CAS No. 7439-92-1), cobalt (II, III) oxide (CAS No. 1308-06-1), and vanadium oxide [(listed as vanadium pentoxide (orthorhombic crystalline form)] (CAS No. 1314-62-1) are listed as Group 2B, possibly carcinogenic to humans. Iron oxide (listed as ferric oxide) (CAS No. 1309-37-1), free crystalline silica (respirable fraction) (listed as silica, amorphous) (CAS No. 7631-86-9), mercury (CAS No. 7439-97-6), and wollastonite (CAS No. 13983-17-0) are listed as Group 3, not classifiable as to its carcinogenicity to humans. No other ingredients in this product are classified with respect to carcinogenicity.

15.2 Chemical Safety Assessment

- None available for the ingredients in this product.

Section 16 – Other Information

ACMI Seal

The product, *Speedball Mid* Fire [Living Coral, Orange Creamsicle, Gossamer Drift, Raspberry Fizz, Variegated Lapis, Storied Sage, Teal Agate, Blue Moss, Midnight Plum, Ethereal Blue, Coriander, Biscotti, Blackcurrant, Wisteria, Night Shade, Green Tourmaline, Buttermilk, Smoke, Blushing White, Blackened Cooper, Champagne Quartz, Jasper, Natural Opal, Lemon Drop], is safe and is certified to contain no materials in sufficient quantities to be toxic or injurious to humans, including children, or to cause acute or chronic health problems.

List of acronyms and abbreviations:

ACGIH: American conference of Governmental Hygienists	NOEC: No Observed Effect Concentration
ATE: Acute Toxicity Estimate	NIOSH: National Institute for Occupational Safety & Health
CAA: Clean Air Act	OSHA: Occupational Safety and Health Administration
CAS: Chemical Abstract Service Number	PBT: Persistent, Bioaccumulative and Toxic
CERCLA: Comprehensive Environmental Response and Liability Act	PEL: Permissible Exposure Level
CFR: Code of Federal Regulations	PPE: Personal Protective Equipment
CWA: Clean Water Act	REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
DFG MAK: Deutsche Forschungsgemeinschaf Maximale Arbeitsplatz-Konzentration	REL: Recommended exposure level
EC: European Commission	RQ: Reportable quantity
EC_{10}: 10% effect concentration	SARA: Superfund Amendment and Reauthorization Act
EC_{50}: Median effective concentration	SDS: Safety Data Sheet
ECHA: European Chemicals Agency	STOT RE: Specific target organ toxicity (repeated exposure)
GHS: Global Harmonized System	TLV: Threshold limit value
HEPA: High Efficiency Particulate Air	TWA: Time-weighted average
IARC: International Agency for Research on Cancer	TSCA: Toxic Substances Control Act
LC_{50}: Lethal Concentration 50%	UN: United Nations
IBC: International Bulk Chemical	vPvB: very Persistent, very Bioaccumulative
MARPOL: Maritime Pollution	

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals
IARC (International Agency for Research on Cancer). 2025. Agents Classified by the IARC Monographs, Volumes 1–129. https://monographs.iarc.who.int/list-of-classifications/
NTP (National Toxicology Program). 2021. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc15
Official Journal of the European Union. 2008. Regulation (EC) No 1272/2008. http://data.europa.eu/eli/reg/2008/1272/2022-03-01

Disclaimer:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Revision Indicator: This is a 1st revision Safety Data Sheet.

Creation Date: November 22, 2023

Revision Date: February 25, 2025

Speedball Mid Fire

SAFETY DATA SHEET (SDS)

Version: 02
Date of Issue: February 25, 2025

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2024

Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name:	Speedball Mid Fire
Product Colors:	Hematite, Sea Glass, Blue Tigger's Eye, Basque Green, Lavender Mist, Dragon Stone, Blue Topaz, Prussian Jade, Dragon's Eye, Galaxy Mist, Prisma Green, Blue Flame
Product sizes:	2 fl. oz. (59.1 mL) - 128 fl. oz. (3.78 L)
Other Means of Identification:	None known
Product Description:	Colored liquid glaze formulations intended to be applied with a brush then placed in a kiln for glaze firing.

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

Relevant identified use(s): The product is intended for general (adults) arts and crafts purposes.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Speedball Art Products Company, LLC
2301 Speedball Rd
Statesville, NC 28677 USA
Business Phone: +1 (704) 838-1475
Email: customerservice@speedballart.com

1.4 Emergency telephone number

Emergency Telephone: Contact the local poison control centre.

Section 2 – Hazard(s) Identification

2.1. Classification of the substance or mixture

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2024

Physical	Health	Environment [a, b]
Not classified	H371: Specific target organ toxicity (single exposure, Category 2, gastrointestinal tract)	H400: Acute aquatic toxicity (Category 1) H410: Chronic aquatic toxicity (Category 1)

[a] This SDS applies to the product line, as such the environmental classifications listed do not pertain to all colors. It should be noted that some colors may present environmental concerns to a lesser degree (*i.e.*, Category 2, 3 or 4) and some colors may present no concerns.

[b] Environmental hazards are outside the scope of OSHA; therefore, product classification for acute and chronic aquatic toxicity (Category 1) is not mandatory.

2.2. Label elements

Label Pictogram:

Signal Word: Warning

Hazard Statements & Precautions:

Specific target organ toxicity (single exposure, Category 2, gastrointestinal tract) (H371)	**May cause irritation to gastrointestinal tract through oral exposure.** **P260**: Do not breathe mist/vapour/spray. **P264:** Wash hands thoroughly after handling. **P270:** Do not eat, drink or smoke when using this product. **P308 + P311:** IF exposed or concerned: Get emergency medical help immediately. **P405**: Store locked up. **P501**: Dispose of contents/container in accordance with local/regional/national/ and/or international regulations.
Acute aquatic toxicity (Category 1) (H400) **Chronic aquatic toxicity (Category 1) (H410)**	**Very toxic to aquatic life with long lasting effects.** **P273:** Avoid release to the environment. **P391:** Collect spillage. **P501:** Dispose of contents/container in accordance with local, regional, national, and/or international regulation.

Supplemental Hazard Information: None

2.3. Other hazards

- Substances when carried in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of ADR provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. Should the single or inner packaging condition or provisions not be met, transportation restrictions will need to be revisited.
- No other hazards have been identified for this product.

Section 3 – Composition / Information on Ingredients

3.1 Substance

The product is a mixture and not a substance.

3.2 Mixture

Chemical Name	CAS No.	EC No.	% Concentration [a]	GHS Hazards
Crystalline silica (Quartz)	14808-60-7	238-878-4	≤18.8407%	H350: Carcinogenicity (Category 1) (Inhalation); H372: Specific target organ toxicity (repeated exposure, Category 1, lungs)
Copper carbonate	12069-69-1	235-113-6	≤3.0350%	H371: Specific target organ toxicity (single exposure, Category 2, gastrointestinal tract); H302: Acute oral toxicity (Category 4); H332: Acute inhalation toxicity (Category 4); H319: Eye Irritation (Category 2); H400: Acute aquatic toxicity (Category 1); H410: Chronic aquatic toxicity (Category 1)
Cobalt carbonate	513-79-1	208-169-4	≤0.5600%	H317: Skin sensitization (Category 1); H334: Respiratory sensitization (Category 1); H341: Germ cell mutagenicity (Category 2); H350: Carcinogenicity (Category 1B) (Inhalation); H360F: Reproductive toxicity (Category 1B; may damage fertility); H400: Acute aquatic toxicity (Category 1); H410: Chronic aquatic toxicity (Category 1)

Zinc oxide	1314-13-2	215-222-5	≤2.1300%	H371: Specific target organ toxicity (single exposure, Category 2, gastrointestinal tract); H400: Acute aquatic toxicity (Category 1); H410: Chronic aquatic toxicity (Category 1)
Titanium dioxide	13463-67-7	236-675-5	≤2.9111%	H351: Carcinogenicity (Category 2) (Inhalation)
Feldspar	68476-25-5	270-666-7	≤ 24.1335%	H335: Specific target organ toxicity (single exposure, Category 3, respiratory irritation); H319: Eye Irritation (Category 2)

[a] Concentrations are calculated as a maximum across all products, rather than by color.

The other ingredients in the product are either considered non-hazardous or are below their respective GHS cut-off values/concentration limits in the final product and were therefore not disclosed in the SDS.

It should be noted that the product may contain quartz (CAS No.14808-60-7) and titanium dioxide (CAS No. 13463-67-7) which may be hazardous when inhaled. Given the nature and physical form of the product (*i.e.*, liquid glaze) airborne respirable particles would not likely be released from the product and therefore the hazard is not relevant to the product.

Assessment of this product was based on the assumption that the glaze will not be sanded after it has been fired in the kiln.

Section 4 – First Aid Measures

4.1 Description of first aid measures

Eye contact: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and immediately flush eyes with water. If eye irritation persists, contact medical advise/attention.

Skin contact: No specific first aid measures are required. If irritation occurs, wash with plenty of water and soap. Take off contaminated clothing. If skin irritation persists: Get medical advice/attention.

Inhalation: No specific first aid measures are required. Inhalation route of exposure is not anticipated with intended use. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Seek medical attention if in doubt.

Ingestion: IF SWALLOWED: Get emergency medical help immediately. Rinse mouth with water. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to **Section 11 - Toxicological Information**.

4.3 Indication of any immediate medical attention and special treatment needed

- Not required.

Section 5 – Fire Fighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media: Use extinguishing media suitable for surrounding area if material is involved in a fire (e.g., water fog, foam, dry chemical or carbon dioxide).

Unsuitable Extinguishing Media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

- Irritating vapours or fumes may form if product is involved in fire:
- Also see **Section 10 - Stability and Reactivity**.

5.3 Advice for firefighters

- Wear a self-contained breathing apparatus to protect against potentially irritating vapours or fumes.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment (PPE) and emergency procedures

Personal Precautions: Ventilate area if spilled in confined space or other poorly ventilated areas. Observe PPE advice in **Section 8 – Exposure Controls/Personal Protection.**

Emergency Procedures: No specific precautions required. Keep unauthorized personnel away.

6.2 Environmental precautions:

- Prevent entry and contact with soil, drains, sewers, and waterways. Collect spillage. Inform relevant local/regional/national/international authorities. Prevent further leakage or spillage if it is safe to do so.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures: Contain spill if safe to do so. Collect recoverable product and place in a designated container for recycle and/or disposal. Ventilate contaminated area thoroughly. Dispose of contents/container in accordance with local/regional/national/international regulations.

6.4 Reference to other sections

- Refer to **Section 8 - Exposure Controls/Personal Protection** and **Section 13 – Disposal Considerations.**

Section 7– Handling and Storage

7.1 Precautions for safe handling

- Wash hands thoroughly after handling.
- Wash contaminated clothing before reuse.
- Employees should be trained in the safe use and handling of chemical materials.
- Refer to **Section 8 - Exposure Controls/Personal Protection.**

7.2 Conditions for safe storage, including any incompatibilities

- Keep container tightly closed to avoid spills.
- Keep in a cool dry place.

7.3 Specific end use(s)

- Refer to **Section 1.2 - Relevant identified uses.**

Section 8– Exposure Controls / Personal Protection

8.1 Control Parameters:

Occupational exposure limits: Only vapours were considered to be foreseeable under conditions of normal use. Airborne particles, such as dust, are not foreseeable under conditions of normal use.

Chemical Name	CAS No.	ACGIH TLVs TWA	OSHA PELs TWA	NIOSH RELs TWA	DFG MAK TWA
Silica, crystalline, mixed respirable (quartz, cristobalite, tridymite)	14808-60-7	0.025 mg/m^3 [a]	0.05 mg/m^3	0.05 mg/m^3	N/A
Titanium dioxide	13463-67-7	10 mg/m^3 [a]	15 mg/m^3 [b]	N/A	0.3 mg/m^3 **R** [c]
Zinc oxide, dust & fume	1314-13-2	2 mg/m^3 [a]	5mg/m^3	5 mg/m^3	0.1 mg/m3 **R**

N/A – Not applicable
R – Measured as respirable fractions of the aerosol

[a] Respirable particulate matter
[b] Total dust
[c] Multiplied with the material density

Note: Titanium dioxide (CAS No. 13463-67-7) values listed above are related to non-ultrafine and non-nanoscale or finescale particles

8.2 Exposure Controls:

Appropriate engineering controls

- No special requirements under ordinary conditions of use and with adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required.

8.3 Personal Protective Equipment

Note: Consider the concentration and amount of product at the workplace when selecting PPE. Use protective equipment as required.

Respiratory:	Under normal conditions of use, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.
Eyes/Face:	If contact is likely, safety glasses with side shields are recommended.
Hands:	Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur, wear chemically protective gloves.
Body/Skin:	Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material.
Thermal Hazards:	None known.
Environmental Exposure Controls:	Not available.
Hygiene measures:	Observe good industrial hygiene practices. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace and should be washed before reuse. When using the product do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Note: The data below are typical values and do not constitute a specification.

Appearance:			
Physical state:	Liquid	**Partition Coefficient**	
Colour:	**See section 1.1**	**n-octanol/water:**	Not available
Odour/Odour threshold:	Not available	**Auto-ignition temperature:**	Not available
pH (as supplied):	7 - 8	**Decomposition temperature:**	Not available
Melting/freezing point:	Not available	**Dynamic viscosity:**	Not available
Boiling point/range:	Not available	**Molecular weight:**	Not available
Flash point:	Not available	**Taste:**	Not available
Evaporation rate:	Not available	**Explosive properties:**	Not available
Flammability:	Not available	**Oxidizing properties:**	Not available
Upper/lower explosive limits:	Not available	**Surface tension:**	Not available
Vapor pressure:	Not available	**Volatile component:**	Not available
Water solubility:	Not available	**Gas group:**	Not available
Vapor density (Air = 1):	Not available	**pH (as solution):**	Not available
Specific gravity (Water = 1):	Not available	**VOC:**	Not available
Relative density:	Not available	**Particle size range:**	Not available

9.2 Other information

- No further data available.

Section 10 – Stability and Reactivity

10.1 Reactivity

- This material is not considered to be reactive under normal handling and storage conditions.

10.2 Chemical stability

- This material is considered stable under normal handling and storage conditions.

10.3 Possibility of hazardous reactions

- Not expected to occur under normal handling and storage conditions.

10.4 Conditions to avoid

- Exposure to high temperatures
- Strong acids
- Strong bases
- Strong oxidisers

10.5 Incompatible materials

- Strong acids
- Strong bases
- Strong oxidisers
- Strong reducing agents.

10.6 Hazardous decomposition products

- Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids.

Section 11 – Toxicological Information

11.1. Information on hazard classes:

Likely routes of exposure: Skin contact.
Potential signs and symptoms: None expected under conditions of normal use.

Acute oral toxicity:	Copper carbonate (CAS No. 12069-69-1) has been classified for acute oral toxicity (Category 4); however, the product is practically nontoxic based on available animal and human use data. The oral ATE for the whole product is >5000 mg/kg.
Acute dermal toxicity:	The product is practically non-toxic based on available animal and human use data. he dermal ATE for the whole product is ATE >5000 mg/kg.
Acute inhalation toxicity:	Copper carbonate (CAS No. 12069-69-1) has been classified for acute inhalation toxicity (Category 4); however, the product is practically non-toxic based on available animal and human use data. The inhalation ATE for the whole product is >5 mg/L.
Skin corrosion/irritation:	The ingredients of this product at >1% are not corrosive to the skin or skin irritants based on human and/or animal studies.
Serious eye damage/irritation:	Feldspar (CAS No. 68476-25-5) and copper carbonate (CAS No. 12069-69-1) have been classified for eye irritation (Category 2). Product classification is not warranted for eye irritation based on a review of available data. The other ingredients in this product >1% are not damaging to the eyes or eye irritants based on human and/or animal studies.
Respiratory or skin sensitization:	Cobalt carbonate (CAS No. 513-79-1) has been classified for skin and respiratory sensitization (Category 1). Product classification is not warranted for skin sensitization given the concentration of cobalt carbonate in the product and a review of available data. Product classification is not warranted for respiratory sensitization

	given the nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in this product at >0.1% are not sensitizing to the skin based on human and/or animal studies.
Mutagenicity:	Cobalt carbonate (CAS No. 513-79-1) has been classified for germ cell mutagenicity (Category 2). Product classification is not warranted for mutagenicity based on nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in the product at >0.1% are not mutagenic based on animal studies or no data identified for the ingredients in this product.
Carcinogenicity:	Quartz (silicon dioxide) (airborne, unbound particles of respirable size) (CAS No. 14808-60-7) has been classified for carcinogenicity (Category 1). Quartz (silicon dioxide) [listed as silica dust, crystalline, in the form of quartz or cristobalite (CAS No. 14808-60-7)] is listed as a carcinogen by IARC, NTP and ACGIH. Titanium dioxide (airborne, unbound particles of respirable size) (CAS No. 13463-67-7) has been classified for carcinogenicity (Category 2). Titanium dioxide (airborne, unbound particles of respirable size) (CAS No. 13463-67-7) is listed as a carcinogen by IARC and ACGIH. Product classification is not warranted for carcinogenicity based on nature and physical form of the product (*i.e.*, liquid glaze). Cobalt carbonate (CAS No. 513-79-1) has been classified for carcinogenicity (Category 1). Product classification is not warranted for carcinogenicity based on nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in the product >0.1% are not carcinogenic based on animal studies or no data identified for the ingredients in this product.
Reproductive Toxicity:	Cobalt carbonate (CAS No. 513-79-1) has been classified for reproductive toxicity (Category 1B, may damage fertility). Product classification is not warranted for reproductive toxicity given the concentration of cobalt carbonate in the product and a review of available data. The other ingredients in the product at >0.1% are not reproductive toxicants based on animal studies or no data identified for the ingredients in this product.
Specific target organ toxicity (single exposure):	Copper carbonate (CAS No. 12069-69-1) and zinc oxide (CAS No. 1314-13-2) have been classified for specific target organ toxicity (single exposure, Category 2; may cause irritation to the gastrointestinal tract through oral exposure). Product classification is warranted for gastrointestinal irritation given the concentration of copper carbonate in the product and a review of available data. Feldspar (CAS No. 68476-25-5) has been classified for specific target organ toxicity (single exposure, Category 3; may cause respiratory irritation). Product classification is not warranted for this effect based on a review of available data and the nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in this product >1% are not specific target organ toxicity (single exposure) hazards based on animal studies or no data identified for the ingredients in this product
Specific target organ toxicity (repeated exposure):	Quartz (silicon dioxide) (CAS No. 14808-60-7) has been classified for specific target organ toxicity (repeated exposure, Category 1; causes damage to lungs through prolonged or repeated exposure *via* inhalation). Product classification is not warranted for this effect given the nature and physical form of the product (*i.e.*, liquid glaze). The other ingredients in this product >1% are not specific target organ toxicity (repeated exposure) hazards based on available information, human and/or animal studies.
Aspiration hazard:	The ingredients in the product at >1% are not aspiration hazards based on animal studies or no data identified for the ingredients in this product.

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

IARC (International Agency for Research on Cancer). 2025. Agents Classified by the IARC Monographs, Volumes 1–129. https://monographs.iarc.who.int/list-of-classifications/

NTP (National Toxicology Program). 2021. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc15

Official Journal of the European Union. 2008. Regulation (EC) No 1272/2008. http://data.europa.eu/eli/reg/2008/1272/2022-03-01

Section 12 – Ecological Information

12.1 Toxicity

- Environmental hazards are outside the scope of OSHA. Based on the criteria outlined in the 10th revision of the GHS, the product is classified for acute and chronic aquatic toxicity (Category 1).

Chemical Name	CAS No.	Species	Result
Copper carbonate [a, b]	12069-69-1	Not specified	$L(E)C_{50}$: 34.4 µg Cu/L
		Not specified	NOEC: 14.9 µg Cu/L
Cobalt carbonate	513-79-1	*Oncorhynchus mykiss*	LC_{50}: 0.8 mg Co/L
		Ceriodaphnia dubia	LC_{50}: 0.61 mg Co/L
		Dendraster excentricus	LC_{50}: 2.32 mg Co/L
		Pseudokirchneriella subcapitata	EC_{50}: 95 µg Co/L - 486 µg Co/L
			EC_{10}: 22.0 µg Co/L - 297 µg Co/L
		Champia parvula	EC_{50}: 24.1 µg Co/L
			EC_{10}: 1.23 µg Co/L
		Skeletonema costatum	EC_{50}: 100,000 µg Co/L
		Dunaliella tertiolecta	EC_{10}: 11,961 µg Co/L
Zinc oxide	1314-13-2	*Danio rerio*	LC_{50} (96h): 1.55 mg/L (bulk ZnO) nominal EC_{50} (84h): 2.066 mg/L (bulk ZnO) nominal
		Danio rerio	EC_{50} (48h): > 5 - < 16.2 mg/L (bulk ZnO) nominal
		Daphnia magna	EC_{50} (48h): >1.4 - <2.5 mg/L nominal
		Daphnia magna	EC_{10} (72h): 0.42 mg/L nominal

[a] According to Regulation (EC) No. 1272/2008 (CLP), M=10 for acute and chronic aquatic effects.

[b] The lowest species-specific acute $L(E)C_{50}$ and chronic NOEC values across pHs were selected as final environmental classification reference values.

12.2 Persistence and degradability

- No data available for the ingredients of the product.

12.3 Bioaccumulative potential

- No data available for the ingredients of the product.

12.4 Mobility in Soil

- Cupric is very slightly [K_d= 2120 L/kg (log Kp (pm/w) = 3.33) (50th percentile)] mobile in soils.
- No data available for the other ingredients in the product.

12.5 Results of PBT and vPvB assessment

- No data available for the ingredients of the product.

12.6 Other adverse effects

- No further data available.

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

Section 13 – Disposal Considerations

13.1 Waste treatment methods

Preparing wastes for disposal: Use product for its intended purpose or recycle if possible. Dispose of waste in accordance with local, regional, national, and/or international regulations. The empty container has residues which may exhibit hazards of the product.

Contaminated Packaging: Container packaging is not expected to exhibit hazards.

Section 14 – Transport Information

Note: This product is not regulated as dangerous goods for transport. Substances when carried in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of ADR provided the packaging meets the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. Should the single or inner packaging condition or provisions not be met, transportation restrictions will need to be revisited. Review classification requirements before shipping materials at elevated temperatures.

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es):	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	None
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not applicable

Special precautions for use: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 15 – Regulatory Information

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

Note: The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in **Section 3 – Composition / Information on Ingredients**.

United States

Federal Regulations:

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA):

Chemical Name	CAS No.	CERCLA RQ
Formaldehyde	50-00-0	100 lbs
1,4-Dioxane	123-91-1	100 lbs
Ethylene oxide	75-21-8	10 lbs
Lead	7439-92-1	10 lbs
Mercury	7439-97-6	1 lbs
Cadmium	7440-43-9	10 lbs

No other ingredients in this product >0.1% are subject to reporting under CERCLA.

Clean Water Act (CWA): Lead (CAS No. 7439-92-1), mercury (CAS No. 7439-97-6) and cadmium (CAS No. 7440-43-9), and chromium (listed as chromium) (CAS No. 7440-47-3) are listed as toxic pollutants. No other ingredients in this product are listed as toxic pollutants.

Clean Air Act (CAA): Ethylene oxide (CAS No. 75-21-8) is listed by the CAA with a threshold quantity of 10,000 lbs. Formaldehyde (CAS No. 50-00-0) is listed by the CAA with a threshold quantity of 15,000 lbs. No other ingredients in this product are listed under the CAA.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA 302 Ingredients: Ethylene oxide (CAS No. 75-21-8) has a reporting quantity of 1,000 lbs in accordance with S.302. Formaldehyde (CAS No. 50-00-0) has a reporting quantity of 500 lbs in accordance with S.302. No other ingredients in this product are subject to reporting requirements of S.302.

SARA 304 Emergency Release Notification: Ethylene oxide (CAS No. 75-21-8) has a reporting quantity of 10 lbs in accordance with S.304. Formaldehyde (CAS No. 50-00-0) has a reporting quantity of 100 lbs in accordance with S.304. No other ingredients in this product are subject to reporting requirements of S.304.

SARA 311/312 Hazards: Specific target organ toxicity (single exposure).

SARA 313 Ingredients: Aluminum oxide (fibrous forms) (CAS No. 1344-28-1), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (CAS No. 7439-97-6), cadmium (CAS No. 7440-43-9), cobalt oxide (CAS No. 1308-06-1), vanadium oxide (CAS No. 1314-62-1), and formaldehyde (CAS No. 50-00-0) are subject to reporting requirements of S.313. No other ingredients in this product are subject to reporting requirements of S.313.

Toxic Substances Control Act (TSCA): Colemanite (CAS No. 1318-33-8), ulexite (CAS No. 1319-33-1), tremolite (non-asbestos) (CAS No. 14567-73-8), wollastonite (CAS No. 13983-17-0), methanol, (1H,3H,5H-oxazolo[3,4-c]oxazol-7a(7H)-ylmethoxy)- (CAS No. 59720-42-2), and 5-hydroxypoly (methyleneoxy (74% C2, 21% C3, 4% C4, 1% C5) methyl-1-aza-3, 7-dioxabicyclo- (3.3.0) octane (CAS No. 56709-13-8) are not listed on the TSCA inventory. All other ingredients are listed on the non-confidential TSCA inventory or are exempt.

State Regulations:

California Candidate Chemicals List: Crystalline silica (listed as silica dust, crystalline, in the form of quartz or cristobalite) (CAS No. 14808-60-7), titanium dioxide (airborne particles of respirable size) (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (CAS No. 7439-97-6), cadmium (CAS No. 7440-43-9), hexavalent chromium [listed as chromium (VI)] (CAS No. 18540-29-9), cobalt oxide (listed as cobalt [II] oxide) (CAS No. 1307-96-6), and vanadium oxide (listed as vanadium pentoxide) (CAS No. 1314-62-1) are listed on California's Candidate Chemicals List. No other ingredients in this product are listed on the Candidate Chemicals List.

California Proposition 65 List: Crystalline silica (airborne particles of respirable size) (CAS No. 14808-60-7) and titanium dioxide (airborne particles of respirable size) (CAS No. 13463-67-7) are listed on the Proposition 65 List; however, given the nature/physical form of the product (*i.e.*, liquid glaze), airborne respirable particles would not likely be released from this product and therefore the listed forms of titanium dioxide and crystalline silica are not relevant for the product. Formaldehyde [formaldehyde (gas)] (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (also listed as lead and lead compounds) (CAS No. not specified), mercury (listed as mercury and mercury compounds) (CAS No. not specified), cadmium (also listed as cadmium and cadmium compounds) (CAS No. 7440-43-9), hexavalent chromium [listed as chromium (hexavalent compounds)] (CAS No. not specified), cobalt oxide (listed as cobalt [II] oxide) (CAS No. 1307-96-6), and vanadium oxide [listed as vanadium pentoxide (orthorhombic crystalline form)] (CAS No. 1314-62-1) are listed on the Proposition 65 List. Warnings for the purpose of California Proposition 65 for cobalt oxide and vanadium oxide are not warranted given the nature/physical form of the product (*i.e.*, liquid glaze). Additionally, a screening assessment indicates that the concentrations of 1,4-dioxane, ethylene oxide, lead, mercury, cadmium, and hexavalent chromium are not expected to be a cause for concern and warnings for the purpose of California Proposition 65 are not required.

Maine List of Chemicals of High Concern: Given the product is not considered to be a toy and is not intended for use by children, the List of Chemicals of High Concern is not applicable to the product.

Massachusetts Toxic or Hazardous Substance List: Crystalline silica (CAS No. 14808 60-7), formaldehyde (CAS No. 50-00-0), cadmium (listed as cadmium and cadmium compounds) (CAS No. 7440-43-9), and hexavalent chromium (CAS No. not specified) are listed on the Toxic or Hazardous Substance List. No other ingredients in this product are listed on the Toxic or Hazardous Substance List.

Minnesota Chemicals of High Concern List and Priority List: Crystalline silica [listed as silica, crystalline (respirable size)] (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (listed as lead subacetate) (CAS No. 1335-32-6), mercury (CAS No. 7439-97-6), cadmium (CAS No. 7440 43-9), hexavalent chromium [listed as chromium(VI)] (CAS No. 18540-29-9), cobalt oxide (listed as cobalt [II] oxide) (CAS No. 1307-96-6), and vanadium oxide [listed as vanadium pentoxide (orthorhombic crystalline form)] (CAS No. 1314-62-1) are listed on the Chemicals of High Concern and Priority list. No other ingredients in this product are listed on the Chemicals of High Concern and Priority list.

New Jersey Right to Know Hazardous Substance List: Kaolinite (listed as kaolin) (CAS No. 1332-58-7), iron oxide (CAS No. 1309-37-1), aluminum oxide (CAS No. 1344-28-1), silicon carbide (CAS No. 409-21-2), glyoxal (CAS No. 107-22-2), borates (listed as borate compounds (CAS No. not specified), crystalline silica (listed as silica, quartz) (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (mercury, elemental and inorganic compounds) (CAS No. 7439-97-6), cadmium (CAS No. 7440 43-9), hexavalent chromium (listed as chromium VI compounds) (CAS No. not specified), cobalt oxide (listed as cobalt compounds) (CAS No. not specified), and vanadium oxide (listed as vanadium pentoxide) (CAS No. 1314-62-1) are listed on the Right to Know Hazardous Substance List. No other ingredients are listed on the Right to Know Hazardous Substance List.

Pennsylvania Hazardous Substance List: Kaolinite (listed as kaolin) (CAS No. 1332-58-7), iron oxide (CAS No. 1309-37-1), aluminum oxide (CAS No. 1344-28-1), silicon carbide (CAS No. 409-21-2), silicon dioxide, amorphous (listed as silica) (CAS No. 7631-86-9), crystalline silica [listed as quartz (SiO_2)] (CAS No. 14808-60-7), titanium dioxide [listed as titanium oxide (TiO_2)] (CAS No. 13463-67-7), formaldehyde (CAS No. 50-00-0), 1,4-dioxane (CAS No. 123-91-1), ethylene oxide (listed as oxirane) (CAS No. 75-21-8), lead (CAS No. 7439-92-1), mercury (mercury, elemental and inorganic compounds) (CAS No. 7439-97-6), cadmium (CAS No. 7440 43-9), hexavalent chromium [listed as chromium, ion (Cr^{6+})] (CAS No. 18540-29-9), cobalt oxide (listed as cobalt) (CAS No. 7440-48-4), and vanadium oxide [listed as vanadium oxide (V_2O_5)] (CAS No. 1314-62-1) are listed on the Hazardous Substance List. No other ingredients in this product are listed on the Hazardous Substance List.
Vermont Chemicals of High Concern to Children: Given the product is not considered to be a toy and is not intended for use by children, the Chemicals of High Concern to Children list is not applicable to the product.
Washington Chemicals of High Concern to Children: Given the product is not considered to be a toy and is not intended for use by children, the Chemicals of High Concern to Children list is not applicable to the product.

International:
IARC: Crystalline silica (listed as silica dust, crystalline, in the form of quartz or cristobalite) (CAS No. 14808-60-7), formaldehyde (CAS No. 50-00-0), ethylene oxide (CAS No.75-21-8), cadmium (listed as cadmium and cadmium compounds) (CAS No. 7440-43-9), and hexavalent chromium (listed as chromium, metallic) (CAS No. 7440-47-3) are listed as Group 1, carcinogenic to humans. Silicon carbide (CAS No. 409-21-2) is listed as Group 2A, probably carcinogenic to humans. Titanium dioxide (CAS No. 13463-67-7), 1,4-dioxane (CAS No. 123-91-1), lead (CAS No. 7439-92-1), cobalt (II, III) oxide (CAS No. 1308-06-1), and vanadium oxide [(listed as vanadium pentoxide (orthorhombic crystalline form)] (CAS No. 1314-62-1) are listed as Group 2B, possibly carcinogenic to humans. Iron oxide (listed as ferric oxide) (CAS No. 1309-37-1), free crystalline silica (respirable fraction) (listed as silica, amorphous) (CAS No. 7631-86-9), mercury (CAS No. 7439-97-6), and wollastonite (CAS No. 13983-17-0) are listed as Group 3, not classifiable as to its carcinogenicity to humans. No other ingredients in this product are classified with respect to carcinogenicity.

15.2 Chemical Safety Assessment
- None available for the ingredients in this product.

Section 16 – Other Information

ACMI Seal

The product, *Speedball Mid Fire* [Hematite, Sea Glass, Blue Tigger's Eye, Basque Green, Lavender Mist, Dragon Stone, Blue Topaz, Prussian Jade, Dragon's Eye, Galaxy Mist, Prisma Green, Blue Flame], must be properly labeled for known health risk [*i.e.*, gastrointestinal irritation as a result of acute oral exposure] and should reflect the ACMI CL Seal.

List of acronyms and abbreviations:

ACGIH: American conference of Governmental Hygienists	NOEC: No Observed Effect Concentration
ATE: Acute Toxicity Estimate	NIOSH: National Institute for Occupational Safety & Health
CAA: Clean Air Act	OSHA: Occupational Safety and Health Administration
CAS: Chemical Abstract Service Number	PBT: Persistent, Bioaccumulative and Toxic
CERCLA: Comprehensive Environmental Response and Liability Act	PEL: Permissible Exposure Level
CFR: Code of Federal Regulations	PPE: Personal Protective Equipment
CWA: Clean Water Act	REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
DFG MAK: Deutsche Forschungsgemeinschaf Maximale Arbeitsplatz-Konzentration	REL: Recommended exposure level
EC: European Commission	RQ: Reportable quantity
EC_{10}: 10% effect concentration	SARA: Superfund Amendment and Reauthorization Act
EC_{50}: Median effective concentration	SDS: Safety Data Sheet
ECHA: European Chemicals Agency	STOT RE: Specific target organ toxicity (repeated exposure)
GHS: Global Harmonized System	TLV: Threshold limit value
HEPA: High Efficiency Particulate Air	TWA: Time-weighted average
IARC: International Agency for Research on Cancer	TSCA: Toxic Substances Control Act
LC_{50}: Lethal Concentration 50%	UN: United Nations
IBC: International Bulk Chemical	vPvB: very Persistent, very Bioaccumulative
MARPOL: Maritime Pollution	

References:

ECHA (European Chemicals Agency). 2023. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

IARC (International Agency for Research on Cancer). 2025. Agents Classified by the IARC Monographs, Volumes 1–129. https://monographs.iarc.who.int/list-of-classifications/

NTP (National Toxicology Program). 2021. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc15

Official Journal of the European Union. 2008. Regulation (EC) No 1272/2008. http://data.europa.eu/eli/reg/2008/1272/2022-03-01

Disclaimer:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Revision Indicator: This is a 1st revision Safety Data Sheet.

Creation Date: November 22, 2023

Revision Date: February 25, 2025

Speedball Mid-Fire Flux Glazes

SAFETY DATA SHEET (SDS)

Version: 01
Date of Issue: May 21, 2025

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2012

Section 1 – Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

Product Name:	Speedball Mid-Fire Flux Glazes
Product Colors:	Carolina Flux, Cocoa Flux, Vanilla Flux
Product sizes:	2 oz – 128 oz
SKU:	21F041, 21F040, 21F039
Product Description:	Colored liquid glaze formulations intended to be applied with a brush, then placed in a kiln for glaze firing.

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

Relevant identified use(s): The product is intended for general (adults) arts and crafts purposes.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Speedball Art Products Company, LLC
2301 Speedball Rd
Statesville, NC 26277
USA

Business Phone: +1 (704) 838-1475

1.4 Emergency telephone number

Emergency Telephone: For health emergencies call the Poison Control Center: 1-800-222-1222.
For transportation emergencies only call CHEMTREC: 1800-262-8200 (US only)

Section 2 – Hazard(s) Identification

2.1. Classification of the substance or mixture

According to: OSHA Hazard Communication Standard 29 CFR 1910.1200(g) Rev. 2012

Physical	Health	Environmental
Not classified	Not classified	Not classified

2.2. Label elements

Label Pictogram: None
Signal Word: None
Hazard Statement: None
Precautionary Statement: None

2.3. Other hazards

- None

Section 3 – Composition / Information on Ingredients

3.1 Substance

The product is a mixture and not a substance.

3.2 Mixture

Chemical Name	CAS No.	EC No.	% Concentration	GHS Hazards
Crystalline silica	14808-60-7	238-878-4	up to 8.803%	H350: Carcinogenicity (Category 1A) (inhalation) H372: Specific target organ toxicity (repeated exposure, Category 1 - lungs)
Titanium dioxide	13463-67-7	236-675-5	up to 0.1775%	H351: Carcinogenicity (Category 2) (Inhalation)
Rutile	1317-80-2	215-282-2	up to 3.8313%	H351: Carcinogenicity (Category 2) (Inhalation)
Feldspar	68476-25-5	270-666-7	up to 7.94%	H373: Specific target organ toxicity (single exposure, Category 3 – may cause respiratory irritation)

The other ingredients in the product are either considered non-hazardous or are below their respective GHS cut-off values/concentration limits in the final product and were therefore not disclosed in the SDS.

The product contains crystalline silica (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), rutile (CAS No. 1317-80-2), and feldspar (CAS No. 68476-25-5), which may be hazardous when inhaled. Given the nature and physical form of the product (*i.e.*, liquid glaze), airborne respirable particles would not likely be released from the product and therefore the hazard is not relevant to the product. It was assumed that the glaze will not be sanded after it has been fired in the kiln.

Section 4 – First Aid Measures

4.1 Description of first aid measures

Eye contact: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and immediately flush eyes with water. If eye irritation persists, contact medical advise/attention.

Skin contact: No specific first aid measures are required. If irritation occurs, wash with plenty of water and soap. Take off contaminated clothing. If skin irritation persists: Get medical advice/attention.

Inhalation: No specific first aid measures are required. Inhalation route of exposure is not anticipated with intended use. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Seek medical attention if in doubt.

Ingestion: No specific first aid measures are required. Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Seek medical attention if in doubt.

4.2 Most important symptoms and effects, both acute and delayed

- Refer to **Section 11 - Toxicological Information**.

4.3 Indication of any immediate medical attention and special treatment needed

- Not required.

Section 5 – Fire Fighting Measures

5.1 Extinguishing media

Suitable Extinguishing Media: Use extinguishing media suitable for surrounding area if material is involved in a fire (e.g., water fog, foam, dry chemical or carbon dioxide).

Unsuitable Extinguishing Media: None known.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products:

- Irritating vapours or fumes may form if product is involved in fire:
- Also see **Section 10 - Stability and Reactivity**.

5.3 Advice for firefighters

- Wear a self-contained breathing apparatus to protect against potentially irritating vapours or fumes.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment (PPE) and emergency procedures

Personal Precautions: Ventilate area if spilled in confined space or other poorly ventilated areas. Observe PPE advice in **Section 8 – Exposure Controls/Personal Protection**.

Emergency Procedures: No specific precautions required. Keep unauthorized personnel away.

.2 Environmental precautions:

Prevent entry and contact with soil, drains, sewers, and waterways. Inform relevant local/regional/national/international authorities. Prevent further leakage or spillage if it is safe to do so.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures: Contain spill if safe to do so. Collect recoverable product and place in a designated container for recycle and/or disposal. Ventilate contaminated area thoroughly. Dispose of contents/container in accordance with local/regional/national/international regulations.

.3 Reference to other sections

Refer to **Section 8 - Exposure Controls/Personal Protection** and **Section 13 – Disposal Considerations**.

Section 7– Handling and Storage

7.1 Precautions for safe handling

- Wash hands thoroughly after handling.
- Wash contaminated clothing before reuse.
- Employees should be trained in the safe use and handling of chemical materials.
- Refer to **Section 8 - Exposure Controls/Personal Protection**.

7.2 Conditions for safe storage, including any incompatibilities

- Keep container tightly closed to avoid spills.
- Keep in a cool dry place.

7.3 Specific end use(s)

- Refer to **Section 1.2 - Relevant identified uses**.

Section 8– Exposure Controls / Personal Protection

8.1 Control Parameters:

Occupational exposure limits: Only vapours were considered to be foreseeable under conditions of normal use. Airborne particles, such as dust, are not foreseeable under conditions of normal use.

Chemical Name	CAS No.	ACGIH TLV TWA	OSHA PEL TWA	NIOSH REL TWA
Crystalline silica	14808-60-7	0.025 mg/m^3 **R**	0.05 mg/m^3 *	0.05 mg/m^3 *
Titanium dioxide	13463-67-7	10 mg/m^3	15 mg/m^3**	N/A

N/A – Not applicable
R – Measured as respirable fractions of the aerosol
* Respirable dust
** Total dust

Note: Titanium dioxide (CAS No. 13463-67-7) values listed above are related to non-ultrafine and non-nanoscale or finescale particles.

8.2 Exposure Controls:

Appropriate engineering controls

- No special requirements under ordinary conditions of use and with adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required.

8.3 Personal Protective Equipment

Note: Consider the concentration and amount of product at the workplace when selecting PPE. Use protective equipment as required.

Respiratory: Under normal conditions of use, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator.

Eyes/Face: If contact is likely, safety glasses with side shields are recommended.

Hands: Use good industrial hygiene practices to avoid skin contact. If contact with the material may occur, wear chemically protective gloves.

Body/Skin: Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material.

Thermal Hazards: None known.

Environmental Exposure Controls: Not available.

Hygiene measures: Observe good industrial hygiene practices. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace and should be washed before reuse. When using the product do not eat, drink or smoke.

Section 9 – Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Note: The data below are typical values and do not constitute a specification.

Appearance:			
Physical state:	Liquid	**Partition Coefficient**	
Color:	See **Section 1.1**	**n-octanol/water:**	Not available
Odor/Odor threshold:	Not available	**Auto-ignition temperature:**	Not available
pH (as supplied):	7.0 – 8.0	**Decomposition temperature:**	Not available
Melting/freezing point:	Not available	**Dynamic viscosity:**	Not available
Boiling point/range:	Not available	**Molecular weight:**	Not available
Flash point:	Not available	**Taste:**	Not available
Evaporation rate:	Not available	**Explosive properties:**	Not available
Flammability:	Not available	**Oxidizing properties:**	Not available
Upper/lower explosive limits:	Not available	**Surface tension:**	Not available
Vapor pressure:	Not available	**Volatile component:**	Not available
Water solubility:	Not available	**Gas group:**	Not available

Vapor density (Air = 1):	Not available	**pH (as solution):**	Not available
Specific gravity (Water = 1):	Not available	**VOC:**	Not available
Relative density:	Not available	**Particle size range:**	Not available

9.2 Other information

- No further data available.

Section 10 – Stability and Reactivity

10.1 Reactivity

- This material is not considered to be reactive under normal handling and storage conditions.

10.2 Chemical stability

- This material is considered stable under normal handling and storage conditions.

10.3 Possibility of hazardous reactions

- Not expected to occur under normal handling and storage conditions.

10.4 Conditions to avoid

- Exposure to high temperatures
- Strong acids
- Strong bases
- Strong oxidisers

10.5 Incompatible materials

- Strong acids
- Strong bases
- Strong oxidisers
- Strong reducing agents.

10.6 Hazardous decomposition products

- Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, and other products of incomplete combustion. Irritating and toxic substances may be emitted upon combustion, burning, or decomposition of dry solids.

Section 11 – Toxicological Information

Likely routes of exposure: Skin contact, incidental ingestion.
Potential signs and symptoms: None expected under conditions of normal use.

Acute oral toxicity:	The product is practically non-toxic based on available animal and human use data. Oral ATE >5000 mg/kg
Acute dermal toxicity:	The product is practically non-toxic based on available animal and human use data. Dermal ATE >5000 mg/kg
Acute inhalation toxicity:	The product is practically non-toxic based on available animal and human use data.
Skin corrosion/irritation:	The ingredients >1% in the product are not skin irritants based on human and/or animal studies.
Serious eye damage/irritation:	The ingredients >1% in the product are not eye irritants based on human and/or animal studies.
Respiratory or skin sensitization:	The ingredients >0.1% in the product are not sensitizing to the skin based on human and/or animal studies.

Mutagenicity:	The ingredients >0.1% in the product are not mutagenic based on human and/or animal studies.
Carcinogenicity:	Crystalline silica (CAS No. 14808-60-7) (airborne, unbound particles of respirable size) has been classified for carcinogenicity (Category 1A). Titanium dioxide (CAS No. 13463-67-7) (airborne, unbound particles of respirable size) and rutile (CAS No. 1317-80-2) have been classified for carcinogenicity (Category 2). Crystalline silica (listed as silica dust, crystalline, in the form of quartz or cristobalite) is listed as Group 1 by IARC. Titanium dioxide is listed as a Group 2B carcinogen by IARC. Crystalline silica and titanium dioxide are also listed as carcinogens by NTP and ACGIH. Product classification is not warranted for carcinogenicity based on a review of available data and the nature/physical form of the product (*i.e.*, liquid glaze). The other ingredients >0.1% are not carcinogenic based on animal studies or no data identified for the components in this product.
Reproductive Toxicity:	The ingredients >0.1% in the product are not reproductive toxicants based on human and/or animal studies.
Specific target organ toxicity (single exposure):	Feldspar (CAS No. 68476-25-5) has been classified for specific target organ toxicity (single exposure, Category 3 – may cause respiratory irritation). Product classification is not warranted for specific target organ toxicity given the nature/physical form of the product (*i.e.*, liquid glaze). The other ingredients >1% in the product are not specific target organ toxicity (single exposure) toxicants based on human and/or animal studies.
Specific target organ toxicity (repeated exposure):	Crystalline silica (CAS No. 14808-60-7) has been classified for specific target organ toxicity (repeated exposure, Category 1 - lungs). Product classification is not warranted for specific target organ toxicity based on a review of available data and the nature/physical form of the product (*i.e.*, liquid glaze). The other ingredients >1% are not specific target organ toxicity (repeated exposure) toxicants based on human and/or animal studies.
Aspiration hazard:	The ingredients >1% in the product are not aspiration hazards based on human and/or animal studies.

References:

ECHA (European Chemicals Agency). 2025. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

IARC (International Agency for Research on Cancer). 2025. Agents Classified by the IARC Monographs, Volumes 1–129. https://monographs.iarc.who.int/list-of-classifications/

NTP (National Toxicology Program). 2021. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc15

Section 12 – Ecological Information

12.1 Toxicity

- This product is not expected to be harmful or toxic to aquatic life.

12.2 Persistence and degradability

- No data available for the other components of the product.

12.3 Bioaccumulative potential

- No data available.

12.4 Mobility in Soil

- No data available.

12.5 Results of PBT and vPvB assessment

- No data available.

12.6 Other adverse effects

- No further data available.

References:

ECHA (European Chemicals Agency). 2025. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

Section 13 – Disposal Considerations

13.1 Waste treatment methods

Preparing wastes for disposal: Use product for its intended purpose or recycle if possible. Dispose of waste in accordance with local, regional, national, and/or international regulations. The empty container has residues which may exhibit hazards of the product.

Contaminated Packaging: Container packaging is not expected to exhibit hazards.

Section 14 – Transport Information

Note: This product is not regulated as dangerous goods for transport.

14.1 UN number	Not applicable
14.2 UN proper shipping name	Not applicable
14.3 Transport hazard class(es):	Not applicable
14.4 Packing group	Not applicable
14.5 Environmental hazards	None
14.6 Special precautions for user	None
14.7 Maritime transport in bulk according to IMO instruments	Not applicable

Section 15 – Regulatory Information

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

Note: The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in **Section 3 – Composition / Information on Ingredients**.

United States

Federal Regulations:

Comprehensive Environmental Response and Liability Act of 1980 (CERCLA): No ingredients in this product >0.1% are subject to reporting under CERCLA.

Clean Water Act (CWA): No ingredients in this product are listed as toxic pollutants.

Clean Air Act (CAA): Formaldehyde (CAS No. 50-00-0) is listed by the CAA with a threshold quantity of 15,000 lbs. No other ingredients in this product are listed under the CAA.

Superfund Amendments and Reauthorization Act (SARA) Title III Information:

SARA 302 Components: Formaldehyde (CAS No. 50-00-0) has a reporting quantity of 500 lbs in accordance with S.302. No other ingredients in this product are subject to reporting requirements of S.302.

SARA 304 Emergency Release Notification: Formaldehyde (CAS No. 50-00-0) has a reporting quantity of 100 lbs in accordance with S.304. No other ingredients in this product are subject to reporting requirements of S.304.

SARA 311/312 Hazards: None.

SARA 313 Components: Formaldehyde (CAS No. 50-00-0) is subject to reporting requirements of S.313. No other ingredients in this product are subject to reporting requirements of S.313.

Toxic Substances Control Act (TSCA): Silica, amorphous (CAS No. 112926-00-8), aluminum silicate (CAS No. 1302-76-7), xanthan gum (CAS No. 11138-66-2), methanol, (1H,3H,5H-oxazolo[3,4-c]oxazol-7a(7H)-ylmethoxy)- (CAS No. 59720-42-2), 5-hydroxypoly (methyleneoxy (74% C2, 21% C3, 4% C4, 1% C5) methyl-1-aza-3, 7-dioxabicyclo- (3.3.0) octane (CAS No. 56709-13-8), and nepheline syenite (CAS No. 37244-96-5) are not listed on the non-confidential TSCA inventory. All other ingredients are listed on the non-confidential TSCA inventory or are exempt.

State Regulations:

California Candidate Chemicals List: Crystalline silica (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), talc (CAS No. 14807-96-6), and formaldehyde (CAS No. 50-00-0) are listed on California's Candidate Chemicals List. No other ingredients in this product are listed on the Candidate Chemicals List.

California Proposition 65 List: Crystalline silica (CAS No. 14808-60-7) [listed as silica, crystalline (airborne particles of respirable size)] and titanium dioxide (CAS No. 13463-67-7) (airborne particles of respirable size) are listed on the Proposition 65 List; however, given the nature/physical form of the product (*i.e.*, liquid glaze), airborne respirable particles would not likely be released from this product and therefore the listed forms of crystalline silica and titanium dioxide are not relevant for the product. It was assumed that the glaze will not be sanded after it has been fired in the kiln. Formaldehyde [listed as formaldehyde (gas) (CAS No. 50-00-0)] is listed on the California Proposition 65 List as a chemical known to the State of California to cause cancer. A screening assessment indicates that the level of formaldehyde is not expected to be a cause for concern or require warnings as per California Proposition 65.
Maine List of Chemicals of High Concern: Given the product is not considered to be a toy and is not intended for use by children, the List of Chemicals of High Concern is not applicable to the product.
Massachusetts Toxic or Hazardous Substance List: Fine mineral media (CAS No. not provided) and formaldehyde (CAS No. 50-00-0) are listed on the Toxic or Hazardous Substance List. No ingredients in this product are listed on the Toxic or Hazardous Substance List.
Minnesota Chemicals of High Concern List and Priority List: Crystalline silica (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), and formaldehyde (CAS No. 50-00-0) are listed on the Chemicals of High Concern and Priority list. No other ingredients in this product are listed on the Chemicals of High Concern and Priority list.
New Jersey Right to Know Hazardous Substance List: Silica, amorphous (CAS No. 112926-00-8), kaolin (CAS No. 1332-58-7), crystalline silica (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), C.I. Pigment Red 101 (CAS No. 1309-37-1), glyoxal (CAS No. 107-22-2) and formaldehyde (CAS No. 50-00-0) are listed on the Right to Know Hazardous Substance List. No other ingredients are listed on the Right to Know Hazardous Substance List.
Pennsylvania Hazardous Substance List: Fine mineral media (CAS No. not provided), kaolin (CAS No. 1332-58-7), crystalline silica (CAS No. 14808-60-7), titanium dioxide (CAS No. 13463-67-7), talc (CAS No. 14807-96-6), rutile (CAS No. 1317-80-2), C.I. Pigment Red 101 (CAS No. 1309-37-1), and formaldehyde (CAS No. 50-00-0) are listed on the Hazardous Substance List. No other ingredients in this product are listed on the Hazardous Substance List.
Vermont Chemicals of High Concern to Children: Given the product is not considered to be a toy and is not intended for use by children, the Chemicals of High Concern to Children list is not applicable to the product.
Washington Chemicals of High Concern to Children: Given the product is not considered to be a toy and is not intended for use by children, the Chemicals of High Concern to Children list is not applicable to the product.

International:
IARC: Crystalline silica (listed as silica dust, crystalline, in the form of quartz or cristobalite) (CAS No. 14808-60-7), and formaldehyde (CAS No. 50-00-0) are listed as Group 1, carcinogenic to humans. Titanium dioxide (CAS No. 13463-67-7) is listed as Group 2B, possibly carcinogenic to humans. C.I. Pigment Red 101 (CAS No. 1309-37-1) is listed as Group 3, not classifiable as to its carcinogenicity to humans. No other ingredients in this product are classified with respect to carcinogenicity.

15.2 Chemical Safety Assessment

- None available for the ingredients in this product.

Section 16 – Other Information

An **AP (Approved Product)** label is appropriate for this product. The product, *Speedball Mid-Fire Flux Glazes*, is safe and is certified to contain no materials in sufficient quantities to be toxic or injurious to humans, including children, or to cause acute or chronic health problems.

List of acronyms and abbreviations:

ACGIH: American conference of Governmental Hygienists	NIOSH: National Institute for Occupational Safety & Health
ATE: Acute Toxicity Estimate	NOEC: No Observed Effect Concentration
CAA: Clean Air Act	OSHA: Occupational Safety and Health Administration
CAS: Chemical Abstract Service Number	PBT: Persistent, Bioaccumulative and Toxic
CERCLA: Comprehensive Environmental Response and Liability Act	PEL: Permissible Exposure Level
CFR: Code of Federal Regulations	PPE: Personal Protective Equipment
CWA: Clean Water Act	REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
DFG MAK: Deutsche Forschungsgemeinschaf Maximale Arbeitsplatz-Konzentration	REL: Recommended exposure level
EC: European Commission	RQ: Reportable quantity
ECHA: European Chemicals Agency	SARA: Superfund Amendment and Reauthorization Act
GHS: Global Harmonized System	SDS: Safety Data Sheet
HEPA: High Efficiency Particulate Air	TLV: Threshold limit value
IARC: International Agency for Research on Cancer	TWA: Time-weighted average
IBC: International Bulk Chemical	TSCA: Toxic Substances Control Act
LOAEC: Lowest Observed Adverse Effect Level	UN: United Nations
MARPOL: Maritime Pollution	vPvB: very Persistent, very Bioaccumulative

References:

ECHA (European Chemicals Agency). 2025. REACH Registered Substances Database. https://echa.europa.eu/search-for-chemicals

IARC (International Agency for Research on Cancer). 2025. Agents Classified by the IARC Monographs, Volumes 1–129. https://monographs.iarc.who.int/list-of-classifications/

NTP (National Toxicology Program). 2021. Report on Carcinogens, Fifteenth Edition.; Research Triangle Park, NC: U.S. Department of Health and Human Services, Public Health Service. https://ntp.niehs.nih.gov/go/roc15

Disclaimer:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Revision Indicator: This is a new Safety Data Sheet.

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