

Brilliant Blue FCF 2322

(Product type: Water Soluble Dye)

Version number GHS 4.0
Replaces version of 2017-05-31 GHS 3

Revision date 2022-01-02
Date format: yyyy-mm-dd

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Identifier(s).

Identification of the substance

Trade name

RTECS No

Registry number(s)

C.I. Food Blue 2

Brilliant Blue FCF 2322

BQ4725000

CAS number 3844-45-9

EC number 223-339-8

Other means of identification

Alternative name(s)

FD&C Blue 1

Erioglaucine

C.I. Acid Blue 9, C.I. Number 42090

Item code(s)

D2322P

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

Relevant identified uses

Dye

Professional use

Industrial use

Marker, Tracer Colorant

Technical use

Floral & Craft Use

Uses advised against

Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household). Not for use with foodstuffs, pharmaceutical products or cosmetics. This product is for industrial and professional use only; it is not intended for household use.

1.3 Details of the supplier of the safety data sheet

Robert Koch Industries, Inc.
4770 N. Harback Road
Bennett, CO 80102
United States
Telephone. +1 303.644.3763
Fax. +1 303.644.3045
Normal business hours: 0800 - 1700 MST/DST (UTC-7)
e-mail: sales@kochcolor.com.
Website. www.kochcolor.com.

e-mail (competent person)

sales@kochcolor.com
(Mark Koch)

**1.4 Emergency telephone number
Emergency information service**

1.800.535.5053 Infotrac (24 hours) USA and Canada
Outside of USA or Canada, call +1 352.323.3500

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
B.cD	Combustible dust.	Comb. Dust	CD	OSHA003

For full text of abbreviations: see SECTION 16.

2.2 Label elements	
Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)	
Signal word	Warning
Pictograms	Not required
Hazard statements	
OSHA003	May form combustible dust concentrations in air.

SECTION 3: Composition/information on ingredients

3.1 Substances	
Name of substance	C.I. Food Blue 2
Identifiers	
CAS No	3844-45-9
RTECS No	BQ4725000
Purity	88 – 95 %
Molecular formula	C37H34N2Na2O9S3
Molar mass	792.8 g/mol

SECTION 4: First aid measures

- 4.1 Description of first aid measures**
- General notes**
If irritation or symptoms occur from any route of exposure, remove the affected individual from the area. Remove contaminated clothing and laundry before reuse. In all cases of doubt, or when symptoms persist, seek medical advice.
- Following inhalation**
If inhalation causes irritation, move to fresh air. If symptoms develop or person does not feel well, get medical advice/attention.
- Following skin contact**
Wash with plenty of soap and water.
- Following eye contact**
Flush eyes with clean water for fifteen (15) minutes. Remove contact lenses if safe to do so. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by holding the eyelids open with fingers and rolling eyes in a circular motion. Get medical attention.
- Following ingestion**
Rinse mouth with water. Get medical advice/attention if symptoms occur or if the affected person does not feel well.
- 4.2 Most important symptoms and effects, both acute and delayed**
Dermal contact may temporarily discolor skin due to dye characteristics.
- 4.3 Indication of any immediate medical attention and special treatment needed**
None known. Treat symptomatically.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media**
- Suitable extinguishing media**
In case of fire use water fog, foam, carbon dioxide (CO₂), dry chemical.
- Unsuitable extinguishing media**
Avoid water jet, hose streams, or any method which will create dust clouds.
- 5.2 Special hazards arising from the substance or mixture**
Danger of dust explosion. Deposited combustible dust has considerable explosion potential. As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Concentrated dust/air combinations may produce explosive conditions under certain parameters. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. As a precaution, implement standard safety measures for handling finely divided organic powders. Refer to Section 7.1.
- Hazardous combustion products**
Nitrogen oxides (NO_x). Carbon monoxide (CO). Carbon dioxide (CO₂). Sulphur oxides (SO_x). Irritating or toxic substances may be emitted upon burning, combustion or decomposition.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove persons to safety. Follow emergency procedures such as the need to evacuate the area, notify authorities or to consult an expert. Keep unnecessary personnel away. Wear personal protective equipment to prevent injury. See section 8 of this SDS. Ensure adequate ventilation.

6.2 Environmental precautions

Do not flush product down drains that discharge into public sewer systems. Do not pour onto the ground. Do not release into surface waters such as lakes, rivers and streams. Dispose of unusable product, wash water, and contaminated materials properly. See section 13 for disposal considerations.

6.3 Methods and materials for containment and cleanup

Take up mechanically.

Cover floor drains. Prevent spilled material from leaving the area if safe to do so. Use care to avoid dust generation. vacuum or carefully sweep into a closed container for reuse or disposal. Only use an approved industrial vacuum cleaner.

Suitable absorbent material(s) include:

Collect spilled material and place into suitable container(s) for reuse or disposal. Label containers appropriately.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Take precautionary measures against static discharge. Use only in well-ventilated areas. Only vacuum cleaners containing no ignition sources may be used for combustible dusts. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

Specific notes/details

There is a risk of a dust explosion if powdered combustible dust is present in high-enough concentrations. Dust deposits can accumulate on surfaces in working area. Dust deposits have the potential to form an explosive dust-air mixture if disturbed. Carefully remove accumulated dust from surface areas on a regular basis. Only vacuum cleaners containing no ignition sources may be used for combustible dusts.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

Explosive atmospheres

Avoid generation of dust. Removal of dust deposits. Only vacuum cleaners containing no ignition sources may be used for combustible dusts.

Ventilation requirements

Use local and general ventilation. Ground/bond container and receiving equipment.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection**8.1 Control parameters**

Country	Name of agent	Identifier	TWA [ppm]	TWA [mg/m ³]	Notation	Source
US	Particulates not otherwise classified (PNOC)	PEL	1,766	15	Partml, i, dust	29 CFR 1910.1000
US	Particulates not otherwise classified (PNOC)	PEL	529.5	5	Partml, r, dust	29 CFR 1910.1000

Notation

dust	As dust.
i	Inhalable fraction.
partml	Particles/ml.
r	Respirable fraction.
TWA	Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified).

8.2 Exposure controls**Appropriate engineering controls**

General ventilation. The use of approved dust collection equipment is recommended in high dust environments.

Individual protection measures (personal protective equipment)**Eye/face protection**

Wear eye/face protection.

Hand protection

Wear chemical resistant protective gloves.

Other protection measures

Wear protective clothing (coveralls with hood) to reduce the possibility of stains to skin and clothing. Wash thoroughly after handling. An eyewash station and/or safety shower is recommended in the work area.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment. If inhalation of dust, mist, or vapor is possible, wear an approved respirator in accordance with manufacturer's use limitations and OSHA standard 1910.134 (29CFR).

Environmental exposure controls

Protect against release into the environment using preventative containment measures. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties****Appearance****Physical state**

Solid, Powder

Colour

Blue - Dark blue

Odour

Characteristic - Odourless

Other safety parameters**pH (value)**

Not applicable

Melting point/freezing point

283 °C

Initial boiling point and boiling range

Not determined

Flash point

Not applicable

Evaporation rate

Not determined

Flammability (solid, gas)

This material is combustible, but will not ignite readily

Lower explosion limit (LEL)

37 g/m³

Vapour pressure

Not determined

Density

1,480 kg/m³ at 23 °C

Vapour density

This information is not available

Bulk density

0.55 - 0.75 g/cm³

Solubility(ies)**Water solubility**

340 g/l at 20 °C

SDS Brilliant Blue FCF 2322

Version number GHS 4.0
Replaces version of 2017-05-31 GHS 3

Revision date 2022-01-02

Partition coefficient - n-octanol/water (log KOW)	-6.4 (pH value: 6.4, 23 °C)
Auto-ignition temperature	Minimum Autoignition Temp (Dust Cloud) 590 deg C Minimum Autoignition Temp (Dust Layer) 275 deg C
Decomposition temperature	>281 °C
Viscosity	Not relevant Solid matter
Explosive properties	Dust explosion hazards
Oxidising properties	None
9.2 Other information	
Dust explosion class	ST 1 weak explosive (rate of pressure; Kst > 0 - < 200 bar m/s)
Maximum explosion pressure	9 bar

SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Avoid conditions that create dust.

10.5 Incompatible materials

Strong oxidisers.

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if swallowed.

Acute toxicity				
Exposure route	Endpoint	Value	Species	Source
Oral	LD50	4,600 mg/kg	Mouse	Gross, E. [1961] Z. Krebsforsch. 64, 287
Oral	LD50	>2,000 mg/kg	Rat	EFSA Journal 2010;8(11):1853 Page 16
Dermal	LD50	>5,000 mg/kg	Mouse	BASF AG 1982 c.
Mouse LD50 (subcutaneous) 4600 mg/kg Source: Zeitschrift fuer Krebsforschung. Vol. 64, Pg. 287, 1961.				

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

SDS Brilliant Blue FCF 2322

Version number GHS 4.0
Replaces version of 2017-05-31 GHS 3

Revision date 2022-01-02

Carcinogenicity

Shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans		
Name of substance	CAS No	Classification
C.I. Food Blue 2	3844-45-9	3

Legend

3 Not classifiable as to carcinogenicity in humans.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)				
Endpoint	Value	Species	Source	Exposure time
LC50	824 mg/l	Rainbow trout (Oncorhynchus mykiss)	Sigma Aldrich Erioglaucine Disodium Salt SDS July 1, 2014 Pg. 5	96 h
Endpoint	Value	Species	Source	Exposure time
EC50	>1,000 mg/l	Microorganisms	European Chemicals Agency, http://echa.europa.eu/	3 h

12.2 Persistence and degradability

Process of degradability		
Process	Degradation rate	Time
Carbon dioxide generation	<10 %	28 d

12.3 Bioaccumulative potential

Data are not available.

n-octanol/water (log KOW)	-6.4 (pH value: 6.4, 23 °C)
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12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

Not listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste Treatment Methods / Disposal Instructions

Avoid release to the environment. Do not contaminate ponds, waterways or ditches with product or container. Dispose of contents/container in accordance with applicable local, regional, national, and international regulations.

Sewage disposal-relevant information

Do not allow this material to enter floor drains, sewer drains or storm drains.

Waste treatment of containers/packagings

Containers containing product or product residue should be disposed of in the same manner as the product. Completely emptied and thoroughly cleaned containers can be recycled.

SECTION 14: Transport information

- 14.1 **UN number** Not subject to transport regulations
- UN proper shipping name** Not assigned
- 14.3 **Transport hazard class(es)** Not assigned
- 14.4 **Packing group** Not assigned
- 14.5 **Environmental hazards** Non-environmentally hazardous acc. to the dangerous goods regulations
- 14.6 **Special precautions for user**
There is no additional information.
- 14.8 **Information for each of the UN Model Regulations**
- 14.8.3 **Transport of dangerous goods by road or rail (49 CFR US DOT)**
Not subject to transport regulations.
- 14.8.6 **International Maritime Dangerous Goods Code (IMDG)**
Not subject to IMDG.
- 14.8.7 **International Civil Aviation Organization (ICAO-IATA/DGR)**
Not subject to ICAO-IATA.

SECTION 15: Regulatory information

- 15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- National regulations (United States)**
- Toxic Substance Control Act (TSCA)** Substance is listed
- Superfund Amendment and Reauthorization Act (SARA TITLE III)**
- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)**
- Not listed.
- Specific Toxic Chemical Listings (EPCRA Section 313)**
- Not listed.
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)**
- Not listed.
- Clean Air Act**
- Not listed.
- Cleaning Product Right to Know Act Substance List (CA-RTK)**
- Not listed.
- Toxic or Hazardous Substance List (MA-TURA)**
- Not listed.
- Hazardous Substances List (MN-ERTK)**
- Not listed.

SDS Brilliant Blue FCF 2322

Version number GHS 4.0
Replaces version of 2017-05-31 GHS 3

Revision date 2022-01-02

Hazardous Substance List (NJ-RTK)

Not listed.

Hazardous Substance List (Chapter 323) (PA-RTK)

Not listed.

Hazardous Substance List (RI-RTK)

Not listed.

California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1986

Not listed.

Drug precursors Chemicals designated within the Controlled Substances Act, 21 U.S.C. § 802, paragraphs 34 (list I) and 35 (list II)

Not listed.

VOC content

Regulated Volatile Organic Compounds (VOC-EPA): 0 %.

Regulated Volatile Organic Compounds (VOC-Cal ARB): 0 %.

Industry or sector specific available guidance(s)

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	Material that must be preheated before ignition can occur
Health	1	Material that, under emergency conditions, can cause significant irritation
Instability	0	Material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	Inventory	Status
AU	AICS	Substance is listed
CA	DSL	Substance is listed
CN	IECSC	Substance is listed
EU	ECSI	Substance is listed
EU	REACH Reg.	Substance is listed
JP	CSCL-ENCS	Substance is listed
KR	KECI	Substance is listed
MX	INSQ	Substance is listed
NZ	NZIoC	Substance is listed
PH	PICCS	Substance is listed
TR	CICR	Substance is listed
TW	TCSI	Substance is listed
US	TSCA	Substance is listed

Legend

AICS Australian Inventory of Chemical Substances.
 CICR Chemical Inventory and Control Regulation.
 CSCL-ENCS List of Existing and New Chemical Substances (CSCL-ENCS).
 DSL Domestic Substances List (DSL).
 ECSI EC Substance Inventory (EINECS, ELINCS, NLP).
 IECSC Inventory of Existing Chemical Substances Produced or Imported in China.
 INSQ National Inventory of Chemical Substances.
 KECI Korea Existing Chemicals Inventory.
 NZIoC New Zealand Inventory of Chemicals.
 PICCS Philippine Inventory of Chemicals and Chemical Substances (PICCS).
 REACH Reg. REACH registered substances.

SDS Brilliant Blue FCF 2322

Version number GHS 4.0
Replaces version of 2017-05-31 GHS 3

Revision date 2022-01-02

Legend

TCSI Taiwan Chemical Substance Inventory.
TSCA Toxic Substance Control Act.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
Cal ARB	California Air Resources Board
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
DGR	Dangerous Goods Regulations (see IATA/DGR)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	Environmental Protection Agency. An agency of the federal government of the United States charged with protecting human health and the environment
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
NLP	No-Longer Polymer
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Workplace exposure limit
Ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
TWA	Time-weighted average
VOC	Volatile Organic Compounds
VPvB	Very Persistent and very Bioaccumulative

SDS Brilliant Blue FCF 2322

Version number GHS 4.0
Replaces version of 2017-05-31 GHS 3

Revision date 2022-01-02

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
OSHA003	May form combustible dust concentrations in air.

Disclaimer

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This Safety Data Sheet (SDS) cannot cover all possible situations which the user may experience during use of this product. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. It is your responsibility to develop appropriate work practice guidelines and employee instructional programs for your operation.