46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352

btinfo@biotium.com
http://www.biotium.com/

SAFETY DATA SHEET

Date: May 20, 2022

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: TrueBlack Lipofuscin Autofluorescence Quencher, 20X in DMF
Catalog Number: 23007
Unit Size: 1 mL
Manufacturer/Supplier: Biotium, Inc.
46117 Landing Parkway, Fremont, CA 94538, USA
Phone: 1-510-265-1027, Fax: 1-510-265-1352
Web: http://www.biotium.com

Use as laboratory reagent. For research use only. Not for food, drug, household, or cosmetic use.

2. HAZARDS IDENTIFICATION

GHS classification
Signal word Danger
Health hazards
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4),
Eye irritation (Category 2A)
Carcinogenicity (Category 1B)
Reproductive toxicity (Category 1B)
Physical hazards
Flammable liquids (Category 3)

GHS hazard pictogram

WHMIS classification
Flammable liquids, Category 3
Acute toxicity – inhalation, Category 4
Serious eye damage / eye irritation, Category 2A
Carcinogenicity, Category 1B
Reproductive toxicity , Category 1B
Specific target organ toxicity - repeated exposure - Category 1

WHMIS hazard pictogram

NFPA Rating
Health hazard: 2
Fire: 2
Reactivity Hazard: 0

Classification according to Regulation (EC) No 1272/2008[CLP]
Acute Tox. 4
Eye Irrit. 2
Acute Tox. 4
Repr. 1B

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
btinfo@biotium.com
http://www.biotium.com/

Labeling according to Regulation (EC) No 1272/2008[CLP]
Hazard pictogram

Signal word Danger
Hazard statements
H312 - Harmful in contact with skin
H319 - Causes serious eye irritation
H332 - Harmful if inhaled
H360D *** - May damage the unborn child

Precautionary statements
Prevention
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash hands thoroughly after handling
P271 – Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P281 - Use personal protective equipment as required.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P322 - Specific measures (see …on this label).
P363 - Wash contaminated clothing before reuse.
P405 – Store locked up.
P501 – Dispose of content/container to approved waste disposal plant.
Response
P302+P352 - IF ON SKIN: Wash with plenty of soap and water
P304+P312 - IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308+P313- IF exposed or concerned: Get medical advice/attention
P337+P313P - If eye irritation persists: Get medical advice/attention

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	EC No.	Weight **%**	Classification
Dimethyl formamide	68-12-2	200-679-5	98%	Flam. Liq. 3 (GHS, WHMIS) Acute toxicity 4 (GHS, ECHA, WHMIS) Eye irritation 2A (GHS, ECHA, WHMIS) Carcinogenicity 1B (GHS, ECHA, WHMIS) Reproductive toxicity 1B (GHS, ECHA, WHMIS) Specific target organ toxicity 1 (ECHA, WHMIS)

4. FIRST- AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
btinfo@biotium.com
http://www.biotium.com/

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.
In case of eye contact
Flush eyes with water as a precaution.
If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Suitable extinguishing media
Carbon dioxide, dry chemical extinguishers, foam extinguishers or water.
Special protective equipment for firefighters
Wear self contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid breathing vapors, mist or gas. Remove all sources of ignition.
Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Methods and materials for containment and cleaning up
Contain spillage. Soak up spilled substance with inert absorbent material. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid inhalation of vapor or mist.
Avoid direct contact with substance.
Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.
Store at room temperature.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters
Substance: Dimethyl formamide
CAS no. 68-12-2

Country	Australia	Austria	Belgium	Canada - Ontario	Canada - Québec	Denmark	European Union
Limit value,8 hours	10 ppm 30 mg/m^3	5 ppm 15 mg/m^3	5 (1) ppm 15 (1) mg/m^3	10 ppm	10 (1) ppm 30 (1) mg/m^3	5 (1) ppm 15 (1) mg/m^3	5 ppm 15 mg/m^3
Limit value, short term	--	10 ppm 30 mg/m^3	10 (1) (2) ppm 30 (1) (2) mg/m^3	--	--	10 (1) (2) ppm 30 (1) (2) mg/m^3	10 (1) ppm 30 (1) mg/m^3

Belgium (1) Additional indication "D" means that the absorption of the agent through the skin, mucous membranes or eyes is an important part of the total exposure. It can be the result of both direct contact and its presence in the air. (2) 15 minutes average value
Canada - Québec (1) Skin
Denmark (1) Skin (2) 15 minutes average value
European Union (1) 15 minutes average value Bold-type: Indicative Occupational Exposure Limit Value (IOELV)

Country	Finland	France	Germany - AGS	Germany - DFG	Hungary	Ireland
Limit value,8 hours	5 ppm 15 mg/m^3	5 ppm 15 mg/m^3	5 (1) ppm 15 (1) mg/m^3	5 (1) ppm 15 (1) mg/m^3	15 mg/m^3	5 ppm 15 mg/m^3

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
btinfo@biotium.com
http://www.biotium.com/

Limit value, short term	10 (1) ppm 30 (1) mg/m^3	10 (1) ppm 30 (1) mg/m^3	10 (1) (2) ppm 30 (1) (2) mg/m^3	10 (1) (2) ppm 30 (1) (2) mg/m^3	30 (1) mg/m^3	10 (1) ppm 30 (1) mg/m^3

Finland (1) 15 minutes average value
France Bold type: Restrictive statutory limit values Skin (1) 15 minutes average value
Germany (AGS) (1) Skin (2) 15 minutes average value
Germany (DFG) (1) Skin (2) 15 minutes average value
Hungary (1) 15 minutes average value Ireland
Ireland (1) 15 minutes reference period

Country	Italy	Japan (MHLW)	Japan (JSOH)	Latvia	New Zealand	Norway
Limit value,8 hours	5 (1) ppm 15 (1) mg/m^3	10 ppm	10 ppm 30 mg/m^3	5 ppm 15 mg/m^3	10 ppm 30 mg/m^3	5 (1) ppm 15 (1) mg/m^3
Limit value, short term	10 (1) (2) ppm 30 (1) (2) mg/m^3	--	--	10 (1) ppm 30 (1) mg/m^3	--	10 (1) (2) ppm 30 (1) (2) mg/m^3

Italy (1) Skin (2) 15 minutes average value
Latvia (1) 15 minutes average value
Norway (1) Skin (2) 15 minutes average value

Country	People's Republic of China	Poland	Romania	Singapore	South Korea	Spain	Sweden
Limit value,8 hours	20 mg/m^3	15 mg/m^3	5 ppm 15 mg/m^3	10 ppm 30 mg/m^3	10 ppm 30 mg/m^3	5 ppm 15 mg/m^3	5 ppm 15 mg/m^3
Limit value, short term	--	30 mg/m^3	10 (1) ppm 30 (1) mg/m^3	--	--	10 ppm 30 mg/m^3	10 (1) ppm 30 (1) mg/m^3

Romania (1) 15 minutes average value
Spain skin
Sweden (1) 15 minutes average value

Country	Switzerland	The Netherlands	Turkey	USA-NIOSH	USA-OSHA	United Kingdom
Limit value,8hours	5 ppm 15 mg/m^3	15 mg/m^3	5 ppm 15 mg/m^3	10 ppm 30 mg/m^3	10 ppm 30 mg/m^3	5 ppm 15 mg/m^3
Limit value, short term	10 ppm 30 mg/m^3	30 mg/m^3	10 (1) ppm 30 (1) mg/m^3	--	--	10 (1) ppm 30 (1) mg/m^3

Turkey (1) 15 minutes average value
United Kingdom (1) 15 minutes average value

Personal protective equipment
Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Respiratory protection
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Eye protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
btinfo@biotium.com
http://www.biotium.com/

Chemical Name	TrueBlack Lipofuscin Autofluorescence Quencher, 20X in DMF
Appearance	Dark blue/black solution
Odor	No data available
Odor threshold	No data available
pH	No data available
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporate rate	No data available
Flammability	No data available
Explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Relative density	No data available
Solubility	No data available
Partition coefficient:n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
No data available
Conditions to avoid
Heat, flames and sparks.
Materials to avoid
No data available
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50 3,010 mg/kg (rat, male and female), OECD Test Guideline 401, Symptoms: Gastrointestinal disturbance

Inhalation LC50 4 h - 11.1 mg/l, Expert judgment, Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Dermal LD50 1,500 mg/kg (rabbit), Remarks: (Regulation (EC) No 1272/2008, Annex VI) (IUCLID)

Other information on acute toxicity No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 20 h
Remarks: (ECHA)
Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation
Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI)
Respiratory or skin sensitization
Local lymph node assay (LLNA) - Mouse

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
btinfo@biotium.com
http://www.biotium.com/

Result: negative
(OECD Test Guideline 406)
Germ cell mutagenicity
Test Type: sister chromatid exchange assay
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: unscheduled DNA synthesis assay
Test system: human diploid fibroblasts
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)
Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Result: negative
Remarks: (ECHA)

Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Intraperitoneal injection

Result: negative
Remarks: (ECHA)

Test Type: dominant lethal test
Species: Rat
Application Route: Inhalation
Result: negative
Remarks: (ECHA)

Test Type: dominant lethal test
Species: Mouse
Application Route: Intraperitoneal
Result: negative Remarks: (ECHA)

Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal
Result: negative Remarks: (ECHA)

Carcinogenicity
IARC: 2A - Group 2A: Probably carcinogenic to humans (N,N-dimethylformamide)
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
Reproductive toxicity May damage the unborn child.
Specific target organ toxicity - single exposure (Globally Harmonized System)
No data available
Specific target organ toxicity - repeated exposure (Globally Harmonized System)

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352
btinfo@biotium.com
http://www.biotium.com/

No data available
Aspiration hazard
No data available
Potential health effects
Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Additional Information
Repeated dose toxicity - Rat - male and female - Oral - 28 d - NOAEL (No observed adverse effect level) - 238 mg/kg - LOAEL (Lowest observed adverse effect level) - 475 mg/kg Remarks: Subacute toxicity

RTECS: LQ2100000
Vomiting
Diarrhea
Abdominal pain
Warning: intolerance for alcohol can occur up to 4 days after dimethylformamide exposure. N,N-dimethylformamide is considered to be a potent liver toxin. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

After absorption:
Headache
Dizziness
Drowsiness

Damage to:
Kidney
Liver
This substance should be handled with particular care.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	flow-through test LC50 - Lepomis macrochirus (Bluegill sunfish) - 7,100 mg/l - 96 h (US-EPA)
Toxicity to daphnia andother aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 13,100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - > 1,000 mg/l - 72 h (DIN 38412)
Toxicity to bacteria	static test EC50 - Vibrio fischeri - 12,300 - 17,500 mg/l - 5 min

Persistence and degradability

Biodegradability	aerobic - Exposure time 21 d Result: 100 % - Readily biodegradable. (OECD Test Guideline 301E)
Biochemical Oxygen Demand (BOD)	900 mg/g Remarks: (Lit.)
Theoretical oxygen demand	1,863 mg/g Remarks: (Lit.)
Bioaccumulative potential	Cyprinus carpio (Carp) - 56 d at 25 °C - 0.002 mg/l(N,N-dimethylformamide) Bioconcentration factor (BCF): 0.3 - 1.2 (OECD Test Guideline 305C) Remarks: Does not significantly accumulate in organisms.
Mobility in soil	No information available

46117 Landing Parkway, Fremont, CA 94538 U.S.A.
Tel: 1-510-265-1027; Fax: 1-510-265-1352

btinfo@biotium.com
http://www.biotium.com/

Results of PBT and vPvB assessment PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects
Stability in water - ca.50 d Remarks: reaction with hydroxyl radicals(calculated)(Lit.)

Additional information No information available

13. DISPOSAL CONSIDERATIONS

Do not dispose product directly into sewage. Consult local state or national regulation for proper disposal.

14. TRANSPORT INFORMATION

IATA, IMDG, DOT (US), TDG Not dangerous goods during transportation
UN number 2265
UN proper shipping name N,N-Dimethylformamide
Transport hazard class 3
Packing group III
Environmental hazards None
Transport in bulk according to Annex II of MARPOL 73/78 and IBC Code None
Special precaution for user None

15. REGULATION INFORMATION

US Federal Regulations
Us Toxic Substances Control Act (TSCA): Dimethyl formamide
SARA 302: No chemicals were found .
SARA 313: Dimethylformamide CAS No 68-12-2.
SARA 311/312 Hazards : Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

WHMIS Hazard Class
Flammable liquids, Category 3
Acute toxicity – inhalation, Category 4
Serious eye damage / eye irritation, Category 2A
Carcinogenicity, Category 1B
Reproductive toxicity , Category 1B
Specific target organ toxicity - repeated exposure - Category 1

16. OTHER INFORMATION

Classification according to Regulation (EC) Nr. 1272/2008
Refer to section 2 and section 3

Prepared by: Regulatory Department
Biotium Inc.
Version no. 5
Revision date (Initials) 5/20/2022 (ET)
Reason for revision Updated classifications in section 2 and 3. Updated workplace exposure limits in section 8. Updated to new document template.

The information provided above is believed to be correct to our best knowledge, but does not purport to be all inclusive, and shall be used only as a guide. This material is sold for research purposes only and is not required to appear on the TSCA inventory. It is not intended for food, drug, household, agricultural or cosmetic use. Its use must be supervised by a technically qualified individual experienced in handling potentially hazardous chemicals. Biotium shall not be held liable for any damage resulting from handling or contact with the above product.