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: October 25, 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Mini Super HT PAP Pen 2.0, Super HT PAP Pen 2.0
Catalog Number: 23023, 23024
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
Flammable liquids (Category 2)
Skin irritation (Category 2)
Aspiration hazard (Category 1)
Specific target organ toxicity - single exposure (Category 3), Central nervous system
Specific target organ toxicity - repeated exposure (Category 2), Central nervous system
Reproductive toxicity (Category 2)
Physical hazards None
Hazard statements
H225: Highly flammable liquid and vapor.
H304: May be fatal if swallowed and enters airways.
H312: Harmful in contact with skin.
H315: Causes skin irritation
H319: Causes serious eye irritation
H332: Harmful if inhaled.
H336: May cause drowsiness or dizziness.
H351: May cause cancer.
H360: May damage fertility or the unborn child.
H361: Suspected of damaging fertility or the unborn child.
H362: May cause harm to breast-fed children.
H373: May cause damage to organs (Central nervous system) through prolonged or repeated exposure.
H400: Very toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.
Precautionary statements
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
P233: Keep container tightly closed.
P235+P403+P410: Store in a well-ventilated place. Keep cool. Protect from sunlight
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/…/equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
P263: Avoid contact during pregnancy/while nursing.
P264: Wash hands thoroughly after handling, wash skin thoroughly after handling.

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/

P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352: IF ON SKIN: wash with plenty of soap and water.
P303+P352+P353+P361: IF ON SKIN (or hair): Wash with plenty of water. Rinse skin with water/shower. Take off immediately all contaminated clothing.
P304+P340: IF INHALED: Remove victim to fresh air and Keep at rest in a position comfortable for breathing.
P305+P338+P351: IF IN EYES: Remove contact lenses if present and easy to do. Continue rinsing. Rinse cautiously with water for several minutes.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P314: Get medical advice/attention if you feel unwell.
P321: Specific treatment (see … on this label).
P331: Do NOT induce vomiting.
P332+P313: IF SKIN irritation occurs: Get medical advice/attention.
P332+P337: If eye irritation persists: Get medical advice/attention
P362: Take off contaminated clothing and wash before reuse.
P391: Collect spillage.
P370+P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P403+P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents/ container to an approved waste disposal plant.

GHS hazard pictogram

NFPA Rating
Health hazard: 2
Fire: 3
Reactivity Hazard: 0

WHMIS classification
Health hazards
Flammable liquids (Category 2)
Skin irritation (Category 2)
Aspiration hazard (Category 1)
Specific target organ toxicity - single exposure (Category 3), Central nervous system
Specific target organ toxicity - repeated exposure (Category 2), Central nervous system
Reproductive toxicity (Category 2)
WHMIS hazard pictogram

Signal word Danger

Classification according to Regulation (EC) No 1272/2008[CLP]
Health hazards

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/

Flammable liquids (Category 2)
Skin irritation (Category 2)
Aspiration hazard (Category 1)
Specific target organ toxicity - single exposure (Category 3), Central nervous system
Specific target organ toxicity - repeated exposure (Category 2), Central nervous system
Reproductive toxicity (Category 2)

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

Signal word Danger

3. COMPOSITION/INFORMATION ON INGREDIENTS

Name	CAS No.	EC No.	Weight **%**	Classification
Toluene	108-88-3	203-625-9	<35%*	Flam. Liq. – Category 2 Skin Irrit. . – Category 2 Asp. Tox. . – Category 1 STOT SE. – Category 3 STOT RE. – Category 2 Repr. . – Category 2 Acute Tox. – Category 4
Resin	--	--	<35%*	
Solvent Naphtha	--	--	<30%*	

*Actual concentration trade secret

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.
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

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/

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: Toluene
CAS no. 108-88-3

Country	Australia	Austria	Belgium	Canada (Ontario)	Canada (Québec)	Denmark	European Union
Limit Value, 8hours	50 ppm 191 mg/m³	50 ppm 190 mg/m³	20 (1) ppm 77 (1) mg/m³	20 ppm	20 ppm	25 (1) ppm 94 (1) mg/m³	50 ppm 192 mg/m³
Limit value, short term	150 ppm 574 mg/m³	100 ppm 380 mg/m³	100 (1)(2) ppm 384 (1)(2) mg/m³	--	--	50 (1)(2) ppm 188 (1)(2) mg/m³	100 (1) ppm 384 (1) mg/m³

Country	Finland	France	Germany (AGS)	Germany (DFG)	Hungary	Ireland
Limit value,8hours	25 ppm 81 mg/m³	20 ppm 76.8 mg/m³	50 (1) ppm 190 (1) mg/m³	50 (1) ppm 190 (1) mg/m³	190 (1) mg/m³	50 (1) ppm 192 (1) mg/m³
Limit value, short term	100 (1) ppm 380 mg/m³	100 (1) ppm 384 (1) mg/m³	100 (1)(2) ppm 380 (1)(2) mg/m³	100 (1)(2) ppm 380 (1)(2) mg/m³	380 (1)(2) mg/m³	100 (1)(2) ppm 384 (1)(2) mg/m³

Country	Israel	Italy	Japan (MHLW)	Japan (JSOH)	Latvia	New Zealand
Limit value,8hours	50 ppm 188 mg/m³	50 (1) ppm 192 (1) mg/m³	20 ppm	50 ppm 188 mg/m³	14 ppm 50 mg/m³	20 (1)(2) ppm 75 (1)(2) mg/m³
Limit value, short term	--	--	--	--	40 (1) ppm 150 (1) mg/m³	100 (1)(2) ppm 377 (1)(2)(3) mg/m³

Country	Norway	People's Republic of China	Poland	Romania	Singapore	South Africa	South Africa Mining
Limit value,8hours	25 (1) ppm 94 (1) mg/m³	50 mg/m³	100 (1) mg/m³	50 ppm 192 mg/m³	50 ppm 188 mg/m³	40 (1) ppm	50 (1) ppm 188 (1) mg/m³
Limit value, short term	--	--	200(1)(2) mg/m³	100 (1) ppm 384 (1) mg/m³	--		150 (1)(2) ppm 560 (1)(2) mg/m³

Country	South Korea	Spain	Sweden	Switzerland	The Netherlands	Turkey
Limit value,8hours	50 ppm	50 (1) ppm 192 (1) mg/m³	50 ppm 192 mg/m³	50 ppm 190 mg/m³	39 ppm 150 mg/m³	50 ppm 192 mg/m³
Limit value, short term	150 (1) mg/m³	100 (1)(2) ppm 384 (1)(2) mg/m³	100 (1) ppm 384 (1) mg/m³	200 ppm 760 mg/m³	100 (1) ppm 384 (1) mg/m³	100 (1) ppm 384 (1) mg/m³

Country	USA -NIOSH	USA -OSHA	United Kingdom
Limit value,8hours	100 ppm 375 mg/m³	200 ppm	50 (1) ppm 191 (1) mg/m³
Limit value, short term	150 (1) ppm 560 (1) mg/m³	300 (1) ppm	100 (1)(2) ppm 384 (1)(2) mg/m³

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

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/

Denmark (1) Skin (2) 15 minutes average value
European Union (1) 15 minutes average value Bold-type: Indicative Occupational Exposure Limit Value (IOELV)
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) Skin (2) 15 minutes average value
Ireland (1) 15 minutes reference period
Italy (1) Skin
Japan (JSOH) (1) Skin
Latvia (1) 15 minutes average value
New Zealand (1) Ototoxic, may damage hearing (2) Exposure can also be estimated by biological monitoring (3) 15 minutes average value
Norway (1) Skin
People's Republic of China (1) 15 minutes average value
Poland (1) Skin (2) 15 minutes average value
Romania (1) 15 minutes average value
South Africa (1) Skin
South Africa Mining (1) Skin (2) 15 minutes average value
South Korea (1) 15 minutes average value
Spain (1) Skin (2) 15 minutes average value
Sweden (1) 15 minutes average value
The Netherlands (1) 15 minutes average value
Turkey (1) 15 minutes average value
USA - NIOSH (1) 15 minutes average value
USA - OSHA (1) Ceiling limit value
United Kingdom (1) Skin (2) 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

Chemical Name	Super HT PAP Pen 2.0
Appearance	Green liquid
Odor	Fragrance
Odor threshold	No data available
pH	5.8
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

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/

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

Toluene:
Acute toxicity
Oral LD50 Rat - male - 5,580 mg/kg
Inhalation LC50 Rat - male - 4 h - 25.7 mg/l - vapor
Dermal LD50 Rabbit - male - > 5,000 mg/kg
Other information on acute toxicity No data available
Skin corrosion/irritation
Skin - Rabbit
Result: irritating - 4 h
(Regulation (EC) No. 440/2008, Annex, B.4)
Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)
Respiratory or skin sensitization
Maximization Test - Guinea pig
Result: negative
(Regulation (EC) No. 440/2008, Annex, B.6)
Germ cell mutagenicity
Test type: In vitro mammalian cell gene mutation test
Test system: Mouse lymphoma test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Test type: Ames test
Test system: S. typhimurium
Metabolic activation: with and without metabolic activation
Method: Regulation
(EC) No. 440/2008, Annex, B.13/14 (Ames test)
Result: negative
Test type: Chromosome aberration test
Species: Rat
Cell type: Bone marrow

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/

Application route: Intraperitoneal
Result: negative
Remarks: (ECHA)

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component 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 identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Suspected of damaging the unborn child

Specific target organ toxicity - single exposure (Globally Harmonized System)

Inhalation - May cause drowsiness or dizziness. - Central nervous system
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

Inhalation - May cause damage to organs through prolonged or repeated exposure. - Central nervous system
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

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 - 13 Weeks - NOAEL (No observed adverse effect level) - 625 mg/kg - LOAEL (Lowest observed adverse effect level) - 1,250 mg/kg

RTECS: XS5250000
Drowsiness, irritant effects, Dizziness, Convulsions, Headache, Nausea, Vomiting, Circulatory collapse, somnolence, inebriation, Unconsciousness, respiratory arrest, CNS disorders, respiratory paralysis, death
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

Toluene:
Toxicity

Toxicity to fish	flow-through test LC50 - Oncorhynchus kisutch (coho salmon) - 5.5 mg/l - 96 h Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates	EC50 - Ceriodaphnia dubia (water flea) - 3.78 mg/l - 48 h (US-EPA)
Toxicity to bacteria	static test EC50 - Bacteria - 84 mg/l - 24 h Remarks: (ECHA)

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/

Toxicity to fish (Chronic toxicity)	flow-through test NOEC - Oncorhynchus kisutch (coho salmon) - 1.39 mg/l - 40 d Remarks: (ECHA)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	NOEC - Ceriodaphnia dubia (water flea) - 0.74 mg/l - 7 d (US-EPA)

Persistence and degradability

Biodegradability	aerobic - Exposure time 20 d Result: 86 % - Readily biodegradable. Remarks: (IUCLID)

Bioaccumulative potential

Bioaccumulation	Leuciscus idus (Golden orfe) - 3 d - 0.05 mg/l(Toluene) Bioconcentration factor (BCF): 9

Mobility in soil No information available
Results of PBT and vPvB assessment No information available
Other adverse effects No information available
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

Toluene:
IATA, IMDG, DOT (US), TDG
UN number 1294
UN proper shipping name Toluene
Transport hazard class 3
Packing group II
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): Benzene, methyl- (CAS-No. 108-88-3)
SARA 302: No chemicals were found.
SARA 313:
The following components are subject to reporting levels established by SARA Title III, Section 313:
Toluene CAS-No. 108-88-3 Revision Date: 2007-07-01
SARA 311/312:
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components
Toluene CAS-No. 108-88-3 Revision Date: 2007-07-01
Pennsylvania Right To Know Components
Toluene CAS-No. 108-88-3 Revision Date: 2007-07-01
California Prop. 65 Components , which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.
Toluene CAS-No. 108-88-3 Revision Date: 2009-02-01

WHMIS Hazard Class

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/

Flammable liquids (Category 2)
Skin irritation (Category 2)
Aspiration hazard (Category 1)
Specific target organ toxicity - single exposure (Category 3), Central nervous system
Specific target organ toxicity - repeated exposure (Category 2), Central nervous system
Reproductive toxicity (Category 2)

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. 1
Revision date (Initials)
Reason for revision

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.