

SAFETY DATA SHEET

Document ID: TB-1000-75 Version AC
Revision Date (year/month/day) 2022/11/18
Last Revision Date (year/month/day) 2018/08/13

Section 1 Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name Lumigen TB Enhancer

Part number TB-1000

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

Product use For laboratory use only. See product literature for details.

1.3 Details of the supplier of the safety data sheet

Manufacturer

Lumigen, Inc. (A Beckman Coulter company)
22900 W. Eight Mile Road
Southfield, MI 48033, U.S.A.
Tel: 248-351-5600

e-mail address ksrashid@beckman.com

1.4 Emergency telephone number

Telephone number (24H) ChemTel Expert Assistance
Hotline/MSDS Fax Access by dialing 800-255-3924 or for
International +01-813-248-0585

Section 2 Hazards identification

2.1 Classification of the substance or mixture

Product description Mixture
White to off-white; Opaque; Solid; Fishy

Classification according to EC 1272/2008 (CLP/GHS)

Acute Toxicity Dermal, Category 4
Acute Toxicity Inhalation, Category 4
Toxic to Reproductive Category 1

Classification according to US-OSHA (HCS 29 CFR 1910.1200) and UN GHS

Acute Toxicity Dermal, Category 4
Acute Toxicity Inhalation, Category 4
Toxic to Reproductive Category 1

2.2 Label elements

According to EC 1272/2008 (CLP/GHS), US-OSHA and UN GHS

Hazardous ingredients

N,N-Dimethylformamide

Pictogram



Signal word

DANGER

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Section 2 Hazards identification (Continued)

Hazard statements

H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H360 May damage fertility or the unborn child.

Precautionary statements

P201 Obtain special instructions before use.
P261 Avoid breathing vapours.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves, protective clothing and eye/face protection.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a POISON CENTER or doctor/physician if you feel unwell.
P362+P364 Take off contaminated clothing and wash it before use.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/national regulations

Product label will display most significant precautionary statements.
97.5% of product contains ingredients of unknown dermal toxicity.
97.5% of product contains ingredients of unknown Inhalation - Vapors toxicity.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

See Section 11 Toxicological Information for more detailed health information.

Section 3 Composition and information on ingredients

3.2 Mixtures

Hazardous ingredients:		Hazard classification of pure ingredients		
Chemical name	% by wt.	EU 1272/2008 CLP/GHS	GHS	Note
N,N-Dimethylformamide CAS # 68-12-2 EINECS # 200-679-5 Index # 616-001-00-X	2 - 5	Acute Tox. Dermal 4, H312 Acute Tox. Inhal. 4, H332 Eye Irrit. 2, H319 Flam. Liq. 3, H226 Repr. 1B, H360	Acute Tox. Dermal 4, H312 Acute Tox. Inhal. 4, H332 Eye Irrit. 2, H319 Flam. Liq. 3, H226 Repr. 1B, H360	REST, SVHC

REST - Subject to Restriction as per Annex XVII of REACH Regulation (EC) No 1907/2006
SVHC - Substance of very high concern

See section 8 for available Occupational exposure limits
See Section 15 for additional regulatory information
See Section 16 for description of hazard class and hazard statements

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Section 4 First aid measures

4.1 Description of first aid measures

- Inhalation** If product is inhaled, move exposed individual to fresh air. If individual is not breathing, begin artificial respiration by trained personnel and obtain medical attention immediately.
- Eye contact** If product enters eyes, rinse eyes gently with water for 15 minutes or longer, making sure that the eyelid is held open. If pain or irritation occurs, obtain medical advice/attention.
- Skin contact** In case of skin contact, rinse with plenty of water. Remove contaminated clothing and shoes. If pain or irritation occurs, obtain medical advice/attention.
- Ingestion** If product is ingested, rinse mouth with water. If irritation or discomfort occurs, obtain medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

Harmful in contact with skin.
Harmful if inhaled.
May damage fertility or the unborn child.
See Section 11 Toxicological Information for more detailed health information.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available. Refer to Section 4.1.

Section 5 Fire fighting measures

- 5.1 Extinguishing media** In case of fire use carbon dioxide (CO₂), dry chemical, water spray or foam. For large fires use extinguishing media suitable for surrounding fire.

5.2 Special hazards arising from the substance or mixture Special fire and explosion hazards

No special hazards determined.

Hazardous combustion products

No combustion products posing significant hazards are expected from this product.

5.3 Advice for fire fighters

Protective equipment Self-contained breathing apparatus is recommended for firefighters in all chemical fire situations.

Additional information No further relevant information available.

Section 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions Observe general safety guidelines for protection; avoid eye and skin contact. Wear protective gloves, protective clothing and eye/face protection.

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Section 6 Accidental release measures (Continued)

- 6.2 Environmental precautions** Contain spill to prevent migration.
Do not allow the undiluted product to enter sewers/surface or ground water.
- 6.3 Methods and material for containment and cleaning up**
- Spill and leak procedures** Vacuum or carefully sweep up spilled material and place in container for suitable disposal. Avoid generating dust.
Dispose of all waste material in accordance with local guidelines.
- 6.4 Reference to other sections** Refer sections 8 and 13.

Section 7 Handling and storage

- 7.1 Precautions for safe handling** Use good laboratory procedures; avoid eye and skin contact.
- 7.2 Conditions for safe storage, including any incompatibilities**
To maintain product quality, store according to the instructions in the product labeling.
Store away from strong acids, strong bases, strong oxidizers and incompatible materials (section 10).
- 7.3 Specific end uses** No further relevant information available.

Section 8 Exposure controls and personal protection

- 8.1 Control parameters**
- Exposure limits**
- US OSHA**
- N,N-Dimethylformamide
CAS # 68-12-2 10 ppm TWA; 30 mg/m³ TWA; prevent or reduce skin absorption
- ACGIH**
- N,N-Dimethylformamide
CAS # 68-12-2 5 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route
- DFG MAK**
- N,N-Dimethylformamide
CAS # 68-12-2 skin notation; 10 ppm Peak; 30 mg/m³ Peak; 5 ppm TWA MAK; 15 mg/m³ TWA MAK
- Ireland**
- N,N-Dimethylformamide
CAS # 68-12-2 5 ppm TWA; 15 mg/m³ TWA; 10 ppm STEL; 30 mg/m³ STEL; Potential for cutaneous absorption
- IOELVs**
- N,N-Dimethylformamide
CAS # 68-12-2 Possibility of significant uptake through the skin; 5 ppm TWA; 15 mg/m³ TWA; 10 ppm STEL; 30 mg/m³ STEL
- NIOSH**
- N,N-Dimethylformamide
CAS # 68-12-2 500 ppm IDLH; 10 ppm TWA; 30 mg/m³ TWA

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Section 8 Exposure controls and personal protection (Continued)

Japan

N,N-Dimethylformamide 10 ppm OEL; 30 mg/m³ OEL
CAS # 68-12-2

Sweden (AFS 2015:7 and amendments)

N,N-Dimethylformamide 5 ppm TLV; 15 mg/m³ TLV; 10 ppm Binding STEL; 30 mg/m³ Binding STEL;
CAS # 68-12-2 Skin notation

N,N-dimethylformamide (CAS No 68-12-2, EC. No 200-679-5) has Derived No-Effect Levels (DNEL) of 6 mg/m³ for exposure by inhalation and 1.1 mg/kg/day for dermal exposure.

8.2 Exposure controls

Engineering controls No special engineering controls are required. Use with good general ventilation.

Eye protection Safety glasses or chemical goggles should be worn to prevent eye contact.
Refer U.S. OSHA 29 CFR 1910.133, European Standard EN166 or appropriate government standards.

Skin protection Wear impervious gloves such as Nitrile or equivalent and protective clothing.
Refer to U.S. OSHA 29 CFR 1910.138, European Standard EN 374, EN 14605:2005+A1:2009 or appropriate government standards.

Respiratory protection Under normal conditions, the use of this product should not require respiratory protection. If overexposure should occur and ventilation is not adequate to maintain airborne concentrations at acceptable levels, the use of respiratory protection should be evaluated by a qualified professional.

Section 9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid	Specific gravity (water=1.0)	Not determined
Color	White to off-white	Solubility	
Odor	Fishy	Water	Soluble
pH	Not applicable	Organic	Not determined
Melting Point	Not determined	Partition coefficient: n-octanol/water	Not determined
Boiling point	Not determined	Auto-ignition temp.	Not applicable
Flash point	Not applicable	Decomposition temperature	Not determined
Flammability (solid, gas)	Not applicable	Vapor pressure	Not determined
Evaporation rate	Not determined	Viscosity	Not applicable
Flammability limits	Not applicable		
Vapor density	Not determined	Explosive properties	Not applicable

9.2 Other information No further relevant information available.

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Section 10 Stability and reactivity

10.1 Reactivity	No further relevant information available.
10.2 Chemical stability	The product is stable in accordance with recommended storage conditions.
10.3 Possibility of hazardous reactions	No further relevant information available.
10.4 Conditions to avoid	To maintain product performance keep away from strong acids, strong bases, strong oxidizers. Avoid exposure to heat and direct sunlight.
10.5 Incompatible materials	No further relevant information available.
10.6 Hazardous decomposition products	When stored as labeled, no known hazardous decomposition products are formed during the shelf-life of this product.

Section 11 Toxicological information

11.1 Information on toxicological effects

Toxicity data for hazardous ingredients

N,N-Dimethylformamide
CAS # 68-12-2

Dermal LD50 Rat 1100 mg/kg; Oral LD50 Rat 2800 mg/kg

Primary routes of exposure Eye contact, ingestion, inhalation, and skin contact.

Acute toxicity Harmful in contact with skin.
Harmful if inhaled.

Skin corrosion/irritation Not classified based on available data.

Serious eye damage/eye irritation Not classified based on available data.

Respiratory/skin sensitization Not classified based on available data.

Germ cell mutagenicity Not classified based on available data.

Carcinogenicity Not classified based on available data.

Reproductive toxicity May damage fertility or the unborn child.

Specific target organ toxicity – single exposure
Not classified based on available data.

Specific target organ toxicity – repeated exposure
Not classified based on available data.

Aspiration hazard Not classified based on available data.

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Section 12 Ecological information

12.1 Ecotoxicity

Fresh water species

N,N-Dimethylformamide
CAS # 68-12-2

96 h LC50 *Lepomis macrochirus*: 6300 mg/L; 96 h LC50 *Oncorhynchus mykiss*: 9800 mg/L [flow-through]; 96 h LC50 *Pimephales promelas*: 10410 mg/L [flow-through]

Microtox

No information available.

Water flea

N,N-Dimethylformamide
CAS # 68-12-2

48 h EC50 *Daphnia magna*: 7500 mg/L; 48 h EC50 *Daphnia magna*: 8485 mg/L [semi-static]; 48 h EC50 *Daphnia magna*: 6800 - 13900 mg/L [Static]

Fresh water algae

N,N-Dimethylformamide
CAS # 68-12-2

96 h EC50 *Desmodesmus subspicatus*: >500 mg/L

12.2 Persistence and degradability Not determined for the product.

12.3 Bioaccumulation Not determined for the product.

12.4 Mobility in soil Not determined for the product.

12.5 Results of PBT and vPvB assessment

Not determined for the product. PBT: Not applicable, vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

Section 13 Disposal considerations

13.1 Waste treatment methods

Product waste disposal

Chemical residues and remains should be routinely handled as special waste. This must be disposed of in compliance with anti-pollution and other laws of the country concerned. To ensure compliance we recommend that you contact the relevant (local) authorities and/or an approved waste-disposal company for information.

Additional information

Suggested European waste catalogue 18 01 07 - chemicals other than those mentioned in 18 01 06. Dispose in accordance with national, state and local waste regulations.

Section 14 Transport information

Transportation of this product is not regulated under ICAO, IATA DGR, IMDG, US DOT, European ADR and RID or Canadian TDG.

14.1 UN/ID number: Not regulated for transportation

14.2 Shipping name: Not regulated for transportation

14.3 Hazard class: Not regulated for transportation

14.4 Packing group: Not regulated for transportation

14.5 Environmental hazards: Not regulated for transportation

14.6 Special precautions for user: None

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14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

Section 15 Regulatory information

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

US Federal and State Regulations


SARA 313 (Section 313, Title III reporting requirements)

CAS # 68-12-2 N,N-Dimethylformamide 1.0% de minimis concentration

CERCLA (The Comprehensive Environmental Response, Compensation, and Liability Act) 40 CFR 302.4

CAS # 68-12-2 N,N-Dimethylformamide

California Proposition 65

 **WARNING** This product can expose you to chemical which is known to the State of California to cause cancer and/or reproductive harm. For more information go to www.P65Warnings.ca.gov

Chemical which is known to the State of California to cause cancer

CAS # 68-12-2 N,N-Dimethylformamide

Chemical which is known to the State of California to cause development toxicity

No ingredients listed.

Chemical which is known to the State of California to cause male reproductive toxicity

No ingredients listed.

Chemical which is known to the State of California to cause female reproductive toxicity

No ingredients listed.

Massachusetts Right To Know (RTK) List

CAS # 68-12-2 N,N-Dimethylformamide

New Jersey Dept. of Health Right To Know (RTK) List

CAS # 68-12-2 N,N-Dimethylformamide

Pennsylvania Right To Know (RTK) List

CAS # 68-12-2 N,N-Dimethylformamide

EU Regulations

This SDS complies with EC Regulations 1907/2006 (REACH) and amendments.

Water Hazard Class (Germany)

WGK 1, low water endangering

REACH 1907/2006 EC - Annex XIV - list of substances subject to authorisation.

Refer to Section 3

Canada

This product meets WHMIS criteria for hazardous materials

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Section 15 Regulatory information (Continued)

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

Some hazardous ingredients listed in Section 15 are below the cutoff limits of 0.1% for carcinogen, mutagen and reproductive toxin and 1% for other health hazards required for reporting in Section 3.

Section 16 Other information

Safety Ratings	Flammability: 0 Health: 3 Reactivity with water: 0 Physical contact: 3	Code 0=None 1=Slight 2=Caution 3=Severe
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Revision changes	Updated Section 3. Updated Section 4. Updated Section 8. Updated Section 11. Updated Section 15. Updated Section 16.
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Description of hazard class and hazard statements from Section 3

Acute Tox. Dermal 4 - Acute Toxicity Dermal, Category 4
Acute Tox. Inhal. 4 - Acute Toxicity Inhalation, Category 4
Eye Irrit. 2 - Eye Irritation Category 2
Flam. Liq. 3 - Flammable Liquids, Category 3
Repr. 1B - Toxic to Reproductive Category 1B
H226 - Flammable liquid and vapour.
H312 - Harmful in contact with skin.
H319 - Causes serious eye irritation.
H332 - Harmful if inhaled.
H360 - May damage fertility or the unborn child.

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
ADR and RID - European Agreement Concerning The International Carriage Of Dangerous Goods By Road and Rail
CERCLA - The Comprehensive Environmental Response, Compensation, and Liability Act
CLP - Classification, Labeling and Packaging
DFGMAK - Republic Germany's maximum exposure limit
GHS - Globally Harmonized System
HCS - Hazard Communication Standard
IARC - International Agency for Research on Cancer
IATA DGR - International Air Transport Association Dangerous Goods Regulation

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Section 16 Other information (Continued)

ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods
IOELVs - European Unions' Indicative Occupational Exposure Limit Values
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PBT - Persistent bioaccumulative and toxic substances
SARA - Superfund Amendments and Reauthorization Act
TDG - Canadian Transportation Of Dangerous Goods Regulations.
UN GHS - United Nations Globally Harmonized System
US DOT - United States Department of Transportation
WHMIS - Workplace Hazardous Material Information System
vPvB - Very persistent and very bioaccumulative substances
EC50 - Effective Concentration, 50%
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%

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