

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

*** alterations as compared to previous version; n.ap. = not applicable; n.av. = not available



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

1.1 Product identifier

Trade Name: MB Taq Polymerase
Article – No.: 53-1050, -1100, -1200, -1250, -0050, -0100, -0200, -0250
Index number: n.av.
EG number: n.av.
CAS number: n.av.
Registration number: n.av.

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

Other non-specified industry: Analytical chemistry, Laboratory chemicals, Research and Development

1.3 Details of the supplier of the safety data sheet

1.3.1 Address of the Company / Supplier:

Minerva Biolabs GmbH, Köpenicker Straße 325, D- 12555 Berlin
 Telephone: +49 30 - 2000 437-0, Telefax: +49 30-2000 437-9, E-Mail: info@minerva-biolabs.com

1.3.2 Responsible for the data sheet:

info@minerva-biolabs.com

1.4 Emergency telephone number

Emergency - Telephone of Company / Undertaking
 Telephone: +49 30-2000 437-0 (08:30 – 16:30)

Information Centre Specializing in Symptoms of
 Poisoning
 Telephone: +44 870 600 6266

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

2.2 Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 Other Hazards

This mixture contains no substances which are assessed to be PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

n.ap.

3.2 Mixtures

Product/ingredient name			H-Phrases	m%-range
Name	Cas – No.	EC – No.		
Glycerol	56-81-5	200-289-5	-	≥50%

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8. Text of H - phrases: see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

4.1.1 Inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

4.1.2 Skin Contact:

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

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**4.1.3 Eye Contact:**

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

4.1.4 Ingestion:

Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed**Potential acute health effects:**

Eye Contact: No known significant effects or critical hazards.

Inhalation: No known significant effects or critical hazards.

Skin Contact: No known significant effects or critical hazards.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms:

Eye Contact: No specific data.

Inhalation: No specific data.

Skin Contact: No specific data.

Ingestion: No specific data.

4.3 Indication of any immediate medical attention and special treatment needed**Notes to physician:**

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific Treatments:

No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media****5.1.1 Suitable Extinguishing Media:**

Use an extinguishing agent suitable for the surrounding fire.

5.1.2 Extinguishing Media to Avoid:

None known.

5.2 Special hazards arising from the substance or mixture

Decomposition products may include the following materials: carbon dioxide, carbon monoxide

5.3 Advice for firefighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

5.3.1 Special Protective Equipment

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

5.3.2 Additional Information

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SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures****6.1.1 For non-emergency personnel**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

6.1.2 For emergency responders

If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "6.1.1 For non-emergency personnel".

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

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6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

6.3.1 Small spill

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

6.3.2 Large spill

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for Safe Handling

7.1.1 Protective measures

Put on appropriate personal protective equipment (see Section 8).

7.1.2 Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: -18 °C.

7.3 Specific end use(s)

7.3.1 Recommendations

Analytical chemistry. Laboratory chemicals, Research and Development.

7.3.2 Industrial sector specific solutions

n.av.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Material

Glycerol

Limit Value

ACGIH TLV (United States, 2/2010). Notes: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract. TWA: 10 mg/m³ 8 hour(s). Form: Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.

8.1.1 Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

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8.2 Exposure controls

8.2.1 Appropriate engineering controls

No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

8.2.2 Individual protection measures

8.2.2a Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2b Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

8.2.2c Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

8.2.2d Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

8.2.2e Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8.2.2f Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8.2.2g Further Information

Observe wearing time limits.

8.2.3 Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

9.1.1	Physical state: Liquid	Colour: Colourless	Odour: Odourless
			Odour treshold: n.av.
9.1.2	pH-value, undiluted:	7.5	
9.1.3	pH-value, 1% aqueous solution:	n.av.	
9.1.4	Melting point / freezing point (°C):	n.av.	
9.1.5	Boiling point / Boiling - range (°C):	n.av.	
9.1.6	Flash point (°C):	n.av.	
9.1.7	Evaporation rate:	n.av.	
9.1.8	Flammability (EEC A10/A13):	n.av.	
9.1.9	Ignition temperature (°C):	n.av.	
9.1.10	Autoflammability (EEC A16):	n.av.	
9.1.11	Explosion hazard:	n.av.	
9.1.12	Oxidising properties:	n.av.	
9.1.13	Explosion limits (Vol.%) lower/upper:	n.av. / n.av.	
9.1.14	Vapour pressure:	n.av.	
9.1.15	Vapour density (Air = 1):	n.av.	
9.1.16	Density (g/ml):	n.av.	
9.1.17	Solubility (in Water):	Easily soluble cold water and hot water.	

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

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- 9.1.18 Partition coefficient, n-Octanol / Water: n.av.
- 9.1.19 Viscosity: n.av.
- 9.1.20 Solvent content (m %): n.av.
- 9.1.21 Thermal decomposition (°C): n.av.
- 9.1.22 Evaporation rate: n.av.
- 9.2 **Other information**
n.av.

SECTION 10: Stability and reactivity

- 10.1 **Reactivity**
No specific test data related to reactivity available for this product or its ingredients.
- 10.2 **Chemical stability**
The product is stable.
- 10.3 **Possibility of hazardous reactions**
Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 **Conditions to avoid**
Handle in accordance with good industrial hygiene and safety practice.
- 10.5 **Incompatible materials**
No specific data.
- 10.6 **Hazardous decomposition products**
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 **Information on toxicological effects**

Acute Health Effects:

Product/ingredient name	Result	Species	Dose	Exposure
Glycerol	LD50 Oral	Rat	12600 mg/kg	-

Conclusion/Summary n.av.

- Inhalation: n.av.
- Ingestion: n.av.
- Skin Contact: n.av.
- Skin corrosion / irritation: n.av.
- Serious eye damage / irritation: n.av.
- Respiratory or skin sensitisation: n.av.
- Germ cell mutagenicity: n.av.
- Carcinogenicity: n.av.
- Reproductive toxicity: n.av.
- Specific target organ toxicity (single exposure): n.av.
- Specific target organ toxicity (repeated exposure): n.av.
- Aspiration hazard: n.av.

11.1.1 – **Practical Experience**

11.1.11 n.av.

11.1.12 **Practical Experience**

Observations relevant for classification:

None.

Further Observations:

None.

Classification of the preparation has been done by calculation in accordance with EEC directives.

11.2 **Information on the likely routes of exposure**

Routes of entry anticipated: Oral, Dermal, Inhalation.

11.3 **Potential acute health effects**

- Inhalation: No known significant effects or critical hazards.
- Ingestion: No known significant effects or critical hazards.

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

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- Skin contact: No known significant effects or critical hazards.
- Eye contact: No known significant effects or critical hazards.
- 11.4 **Symptoms related to the physical, chemical and toxicological characteristics**
 - Inhalation: No specific data.
 - Ingestion: No specific data.
 - Skin contact: No specific data.
 - Eye contact: No specific data.
- 11.5 **Delayed and immediate effects and also chronic effects from short and long term exposure**
 - Short term exposure
 - Potential immediate effects: n.av.
 - Potential delayed effects: n.av.
 - Long term exposure
 - Potential immediate effects: n.av.
 - Potential delayed effects: n.av.
 - Potential chronic health effects: n.av.
- 11.6 **Conclusion/Summary**
 - General: n.av.
 - Carcinogenicity: n.av.
 - Mutagenicity: n.av.
 - Teratogenicity: n.av.
 - Developmental effects: n.av.
 - Fertility effects: n.av.
 - Other information: n.av.

SECTION 12: Ecological information

12.1 **Toxicity**

Product/ingredient name	Result	Species	Exposure
Glycerol	Acute LC50 54-57 ml/L Fresh water	Fish – Oncohynchus mykiss – 0,9 g	96 Stunden

Conclusion/Summary n.av.

12.2 **Persistence and degradability**

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Glycerol	-	>60%; 28 day(s)	Readily

Conclusion/Summary n.av.

12.3 **Bioaccumulative potential**

n.av.

12.4 **Mobility in soil**

n.av.

12.5 **Results of PBT and vPvB assessment**

This mixture contains no substances which are assessed to be PBT or vPvB.

12.6 **Other adverse effects**

- 12.6.1 COD-Value, mg/g: n.av.
- 12.6.2 BOD5-Value, mg/g: n.av.
- 12.6.3 AOX-Remarks: n.ap.
- 12.6.4 Significant Components: None.
- 12.6.5 Other adverse effects: n.ap.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 **Waste treatment methods**

13.1.1 **Product methods of disposal**

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of

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environmental protection and waste disposal legislation and any regional local authority requirements. Within the present knowledge of the supplier, this product is not regarded as hazardous waste, as defined by EU Directive 91/689/EEC.

13.1.2 **Packaging methods of disposal**

The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

13.2 **Contaminated Packaging**

Recommendation: n.av.

Safe Handling: as described under 13.1.1

13.2.3 **Waste - Code - No.**

n.av.

13.3 **Special precautions**

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR Not classified as dangerous in the meaning of transport regulations.	IMDG Not classified as dangerous in the meaning of transport regulations.	IATA Not classified as dangerous in the meaning of transport regulations.
14.1	UN number		
	-	-	-
14.2	UN proper shipping name		
	-	-	-
14.3	Transport hazard class(es)		
	-	-	-
14.4	Packing group		
	-	-	-
14.5	Environmental hazards		
	-	-	-
14.6	Special precautions for user		
	Transport category: Classification Code: Hazard - No.: LQ:		Packing Instructions (Passenger) Packing Instructions (Cargo)
14.7	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code		
		None.	

SECTION 15: Regulatory information

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

n.ap.

15.2 **Chemical safety assessment:**

None.

SECTION 16: Other information

16.1 **Abbreviations and acronyms**

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No.1272/2008]

DNEL = Derived No Effect Level

EUH statement = CLP-specific Hazard statement

PNEC = Predicted No Effect Concentration

RRN = REACH Registration Number

16.2 **Full text of hazard and/or precautionary statements from section 2 to 15**

16.2.1 **Full text of abbreviated H statements**

Date of issue: 14.03.2016 Replaces Data Sheet of: 04.08.2016

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n.av.
16.2.2 **Full text of classifications [CLP/GHS]**

n.av.
16.3 **Other**

This datasheet has been compiled in accordance with EU regulation 1907/2006. The statements in this Safety Data Sheet were made to the best of our knowledge and are as accurate as possible. They are given for information only. They do not constitute a contractual guarantee of a product's properties. They must neither be altered nor transferred to other products.

16.4 **Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, Minerva Biolabs GmbH 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.