

MATERIAL SAFETY DATA SHEET

Product	
Item #	Title
dNTP-100-SVolume	Deoxynucleotide Solution set, 100mM each
Components	
dATP-100-SVolume-PC	dATP, 100-Volume
dCTP-100-SVolume-PC	dCTP, 100-Volume
dGTP-100-SVolume-PC	dGTP, 100-Volume
dTTP-100-SVolume-PC	dTTP, 100-Volume

MATERIAL SAFETY DATA SHEET

Product Title: dATP, 100mM

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: dATP, 100mM
Item number: dATP-100-Volume-PC
Document Number: PC-MSDS-019 Version 001
Relevant identified uses of the substance or mixture and uses advised against
Application of the substance / the mixture
Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Empirical Bioscience
2007 Eastcastle Dr. SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949
MSDS author; customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number
Void		

SECTION 3 — HAZARDS IDENTIFICATION

Classification of the substance or mixture Classification according to the Hazard Communication Standard (HCS).
The product is not classified as hazardous according to the HCS regulation. This substance is not classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No. 1272/2008 (EU-GHS/CLP).
Labelling according to Regulation (EC) No 1272/2008 Void
Hazard pictograms Void
Signal word Void
Hazard statements Void
Classification system: NFPA ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable
Target Organ(s): Liver, Kidney
Other hazards. May be harmful if inhaled and can cause irritation to the respiratory tract. May be harmful if absorbed through the skin causing skin irritation. May cause eye irritation. May be harmful if swallowed.
Results of PBT and vPvB assessment
PBT: Not applicable
vPvB: Not applicable

MATERIAL SAFETY DATA SHEET

Product Title: dATP, 100mM

SECTION 4 — FIRST AID MEASURES

Description of first aid measures

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor for artificial respiration.

After skin contact: Wash with soap and water.

After eye contact: Flush opened eye for several minutes under running water.

After swallowing: Rinse mouth with water. If symptoms persist consult doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed None

Indication of any immediate medical attention and special treatment needed No further relevant information available

SECTION 5 — FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: CO₂, alcohol-resistant foam or water spray.

Special hazards arising from the substance or mixture None known

Advice for firefighters No special advice

Protective equipment: Wear a breathing apparatus that is self contained.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Avoid dust formation.

Environmental precautions: Do not allow to enter sewers/ drains or ground water.

Methods and material for containment and cleaning up: Sweep up. Keep in a suitable closed container for disposing.

Reference to other sections No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

SECTION 7 — HANDLING AND STORAGE

Handling:

Precautions for safe handling Provide exhaust ventilation where dust forms.

Information about protection against explosions and fires: Use normal fire protection measures.

Conditions for safe storage, including any incompatibilities

Storage: Store in a well ventilated, cool place while keeping the container tightly closed.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Recommended storage temperature is -20°C.

Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dATP, 100mM

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Components with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls**Personal protective equipment:**

Breathing equipment: For protection from dusts, use type N95 (US) or type P1 (EN 143) dust masks.

Protection of hands: Use protected gloves for prolonged or repeated exposure.

Protective gloves Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection: Safety goggles are recommended.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties**General Information****Appearance:**

Form: Liquid

Color: White

Odor: Odorless

Odour threshold: Not Determined

pH-value at 20 °C (68 °F): Not Determined

Change in condition

Melting point/Melting range: Not Determined

Boiling point/Boiling range: Not determined

Flash point: Not applicable

Flammability (solid, gaseous): Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Product is not self-igniting

Danger of explosion: Product does not present an explosion hazard

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure at 20 °C (68 °F): Not determined

Density at 20 °C (68 °F): Not determined

Relative density: Not determined

Vapour density: Not determined

Evaporation rate: Not determined

Solubility in / Miscibility with Water: Not determined

Partition coefficient (n-octanol/water): Not determined

Viscosity:

Dynamic: Not determined

Kinematic: Not determined

Solvent content:

Organic Solvents: 0.00%

Water: No data available

Solids content: No data available

Other information No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dATP, 100mM

SECTION 10 — STABILITY AND REACTIVITY

Reactivity**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Hazardous decomposition products are formed in fire conditions including Carbon Oxides, NO_x, Phosphorous oxides, and Lithium oxides.

SECTION 11 — TOXICOLOGICAL INFORMATION

Information on toxicological effects**Acute toxicity:**

LD/LC50 values that are relevant for classification: No data available

Primary irritant effect:

on the skin: Skin irritation.

on the eye: Eye irritation.

Sensitization: No sensitizing effects known.

Additional toxicological information: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic categories IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

SECTION 12 — ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: Not available.

Persistence and degradability Not available.

Behavior in environmental systems:

Bioaccumulative potential Not known.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dATP, 100mM

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation: Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION 14 — TRANSPORT INFORMATION

UN-Number None

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name None

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es) None

DOT, ADR, ADN, IMDG, IATA Class Void

Packing group None

DOT, ADR, IMDG, IATA Void

Environmental hazards:

Marine pollutant: No

Special precautions for user Not applicable

Transport in bulk according to Annex II of MARPOL73/78 and the IBC code Not applicable

UN "Model Regulation": -

SECTION 15 — REGULATORY INFORMATION

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

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Carcinogenicity categories

EPA (Environmental Protection Agency) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.

MAK (German Maximum Workplace Concentration) None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out. This product does not need to be labeled in accordance with EC directives.

MATERIAL SAFETY DATA SHEET

Product Title: dATP, 100mM

SECTION 16 — OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS

Empirical Bioscience

2007 Eastcastle Dr. SE

Grand Rapids, MI 49508 U.S.A.

1-877.479.9949

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50

* **Data compared to the previous version altered.**

MATERIAL SAFETY DATA SHEET

Product Title: dCTP, 100mM

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: dCTP, 100mM
Item number: dCTP-100-Volume-PC
Document Number: PC-MSDS-020 Version 001
Relevant identified uses of the substance or mixture and uses advised against
Application of the substance / the mixture
Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Empirical Bioscience
2007 Eastcastle Dr. SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949
MSDS author; customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number
Void		

SECTION 3 — HAZARDS IDENTIFICATION

Classification of the substance or mixture Classification according to the Hazard Communication Standard (HCS).
The product is not classified as hazardous according to the HCS regulation. This substance is not classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No. 1272/2008 (EU-GHS/CLP).
Labelling according to Regulation (EC) No 1272/2008 Void
Hazard pictograms Void
Signal word Void
Hazard statements Void
Classification system: NFPA ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable
Target Organ(s): Liver, Kidney
Other hazards. May be harmful if inhaled and can cause irritation to the respiratory tract. May be harmful if absorbed through the skin causing skin irritation. May cause eye irritation. May be harmful if swallowed.
Results of PBT and vPvB assessment
PBT: Not applicable
vPvB: Not applicable

MATERIAL SAFETY DATA SHEET

Product Title: dCTP, 100mM

SECTION 4 — FIRST AID MEASURES

Description of first aid measures

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor for artificial respiration.

After skin contact: Wash with soap and water.

After eye contact: Flush opened eye for several minutes under running water.

After swallowing: Rinse mouth with water. If symptoms persist consult doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed None

Indication of any immediate medical attention and special treatment needed No further relevant information available

SECTION 5 — FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: CO2, alcohol-resistant foam or water spray.

Special hazards arising from the substance or mixture None known

Advice for firefighters No special advice

Protective equipment: Wear a breathing apparatus that is self contained.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Avoid dust formation.

Environmental precautions: Do not allow to enter sewers/ drains or ground water.

Methods and material for containment and cleaning up: Sweep up. Keep in a suitable closed container for disposing.

Reference to other sections No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

SECTION 7 — HANDLING AND STORAGE

Handling:

Precautions for safe handling Provide exhaust ventilation where dust forms.

Information about protection against explosions and fires: Use normal fire protection measures.

Conditions for safe storage, including any incompatibilities

Storage: Store in a well ventilated, cool place while keeping the container tightly closed.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Recommended storage temperature is -20°C.

Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dCTP, 100mM

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Components with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls**Personal protective equipment:**

Breathing equipment: For protection from dusts, use type N95 (US) or type P1 (EN 143) dust masks.

Protection of hands: Use protected gloves for prolonged or repeated exposure.

Protective gloves Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection: Safety goggles are recommended.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties**General Information****Appearance:**

Form: Liquid

Color: White

Odor: Odorless

Odour threshold: Not Determined

pH-value at 20 °C (68 °F): Not Determined

Change in condition

Melting point/Melting range: Not Determined

Boiling point/Boiling range: Not determined

Flash point: Not applicable

Flammability (solid, gaseous): Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Product is not self-igniting

Danger of explosion: Product does not present an explosion hazard

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure at 20 °C (68 °F): Not determined

Density at 20 °C (68 °F): Not determined

Relative density: Not determined

Vapour density: Not determined

Evaporation rate: Not determined

Solubility in / Miscibility with Water: Not determined

Partition coefficient (n-octanol/water): Not determined

Viscosity:

Dynamic: Not determined

Kinematic: Not determined

Solvent content:

Organic Solvents: 0.00%

Water: No data available

Solids content: No data available

Other information: No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dCTP, 100mM

SECTION 10 — STABILITY AND REACTIVITY

Reactivity**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Hazardous decomposition products are formed in fire conditions including Carbon Oxides, NO_x, Phosphorous oxides, and Lithium oxides.

SECTION 11 — TOXICOLOGICAL INFORMATION

Information on toxicological effects**Acute toxicity:**

LD/LC50 values that are relevant for classification: No data available

Primary irritant effect:

on the skin: Skin irritation.

on the eye: Eye irritation.

Sensitization: No sensitizing effects known.

Additional toxicological information: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic categories IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

SECTION 12 — ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: Not available.

Persistence and degradability Not available.

Behavior in environmental systems:

Bioaccumulative potential Not known.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dCTP, 100mM

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation: Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION 14 — TRANSPORT INFORMATION

UN-Number None

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name None

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es) None

DOT, ADR, ADN, IMDG, IATA Class Void

Packing group None

DOT, ADR, IMDG, IATA Void

Environmental hazards:

Marine pollutant: No

Special precautions for user Not applicable

Transport in bulk according to Annex II of MARPOL73/78 and the IBC code Not applicable

UN "Model Regulation": -

SECTION 15 — REGULATORY INFORMATION

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

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Carcinogen categories

EPA (Environmental Protection Agency) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.

MAK (German Maximum Workplace Concentration) None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out. This product does not need to be labeled in accordance with EC directives.

MATERIAL SAFETY DATA SHEET

Product Title: dCTP, 100mM

SECTION 16 — OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS

Empirical Bioscience

2007 Eastcastle Dr. SE

Grand Rapids, MI 49508 U.S.A.

1-877.479.9949

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50

* **Data compared to the previous version altered.**

MATERIAL SAFETY DATA SHEET

Product Title: dGTP, 100mM

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: dGTP, 100mM
Item number: dGTP-100-Volume-PC
Document Number: PC-MSDS-021 Version 001
Relevant identified uses of the substance or mixture and uses advised against
Application of the substance / the mixture
Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Empirical Bioscience
2007 Eastcastle Dr. SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949
MSDS author; customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number
Void		

SECTION 3 — HAZARDS IDENTIFICATION

Classification of the substance or mixture Classification according to the Hazard Communication Standard (HCS).
The product is not classified as hazardous according to the HCS regulation. This substance is not classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No. 1272/2008 (EU-GHS/CLP).
Labelling according to Regulation (EC) No 1272/2008 Void
Hazard pictograms Void
Signal word Void
Hazard statements Void
Classification system: NFPA ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable
Target Organ(s): Liver, Kidney
Other hazards. May be harmful if inhaled and can cause irritation to the respiratory tract. May be harmful if absorbed through the skin causing skin irritation. May cause eye irritation. May be harmful if swallowed.
Results of PBT and vPvB assessment
PBT: Not applicable
vPvB: Not applicable

MATERIAL SAFETY DATA SHEET

Product Title: dGTP, 100mM

SECTION 4 — FIRST AID MEASURES

Description of first aid measures

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor for artificial respiration.

After skin contact: Wash with soap and water.

After eye contact: Flush opened eye for several minutes under running water.

After swallowing: Rinse mouth with water. If symptoms persist consult doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed None

Indication of any immediate medical attention and special treatment needed No further relevant information available

SECTION 5 — FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: CO2, alcohol-resistant foam or water spray.

Special hazards arising from the substance or mixture None known

Advice for firefighters No special advice

Protective equipment: Wear a breathing apparatus that is self contained.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Avoid dust formation.

Environmental precautions: Do not allow to enter sewers/ drains or ground water.

Methods and material for containment and cleaning up: Sweep up. Keep in a suitable closed container for disposing.

Reference to other sections No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

SECTION 7 — HANDLING AND STORAGE

Handling:

Precautions for safe handling Provide exhaust ventilation where dust forms.

Information about protection against explosions and fires: Use normal fire protection measures.

Conditions for safe storage, including any incompatibilities

Storage: Store in a well ventilated, cool place while keeping the container tightly closed.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Recommended storage temperature is -20°C.

Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dGTP, 100mM

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Components with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls**Personal protective equipment:**

Breathing equipment: For protection from dusts, use type N95 (US) or type P1 (EN 143) dust masks.

Protection of hands: Use protected gloves for prolonged or repeated exposure.

Protective gloves Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection: Safety goggles are recommended.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties**General Information****Appearance:**

Form: Liquid

Color: White

Odor: Odorless

Odour threshold: Not Determined

pH-value at 20 °C (68 °F): Not Determined

Change in condition

Melting point/Melting range: Not Determined

Boiling point/Boiling range: Not determined

Flash point: Not applicable

Flammability (solid, gaseous): Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Product is not self-igniting

Danger of explosion: Product does not present an explosion hazard

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure at 20 °C (68 °F): Not determined

Density at 20 °C (68 °F): Not determined

Relative density: Not determined

Vapour density: Not determined

Evaporation rate: Not determined

Solubility in / Miscibility with Water: Not determined

Partition coefficient (n-octanol/water): Not determined

Viscosity:

Dynamic: Not determined

Kinematic: Not determined

Solvent content:

Organic Solvents: 0.00%

Water: No data available

Solids content: No data available

Other information No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dGTP, 100mM

SECTION 10 — STABILITY AND REACTIVITY

Reactivity**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Hazardous decomposition products are formed in fire conditions including Carbon Oxides, NO_x, Phosphorous oxides, and Lithium oxides.

SECTION 11 — TOXICOLOGICAL INFORMATION

Information on toxicological effects**Acute toxicity:**

LD/LC50 values that are relevant for classification: No data available

Primary irritant effect:

on the skin: Skin irritation.

on the eye: Eye irritation.

Sensitization: No sensitizing effects known.

Additional toxicological information: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic categories IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

SECTION 12 — ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: Not available.

Persistence and degradability Not available.

Behavior in environmental systems:

Bioaccumulative potential Not known.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dGTP, 100mM

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation: Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION 14 — TRANSPORT INFORMATION

UN-Number None

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name None

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es) None

DOT, ADR, ADN, IMDG, IATA Class Void

Packing group None

DOT, ADR, IMDG, IATA Void

Environmental hazards:

Marine pollutant: No

Special precautions for user Not applicable

Transport in bulk according to Annex II of MARPOL73/78 and the IBC code Not applicable

UN "Model Regulation": -

SECTION 15 — REGULATORY INFORMATION

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

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Carcinogen categories

EPA (Environmental Protection Agency) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.

MAK (German Maximum Workplace Concentration) None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out. This product does not need to be labeled in accordance with EC directives.

MATERIAL SAFETY DATA SHEET

Product Title: dGTP, 100mM

SECTION 16 — OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS

Empirical Bioscience

2007 Eastcastle Dr. SE

Grand Rapids, MI 49508 U.S.A.

1-877.479.9949

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50

* **Data compared to the previous version altered.**

MATERIAL SAFETY DATA SHEET

Product Title: dTTP, 100mM

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Title: dTTP, 100mM
Item number: dTTP-100-Volume-PC
Document Number: PC-MSDS-022 Version 001
Relevant identified uses of the substance or mixture and uses advised against
Application of the substance / the mixture
Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Empirical Bioscience
2007 Eastcastle Dr. SE
Grand Rapids, MI 49508 U.S.A.
1-877.479.9949
MSDS author; customer.service@empiricalbioscience.com

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number
Void		

SECTION 3 — HAZARDS IDENTIFICATION

Classification of the substance or mixture Classification according to the Hazard Communication Standard (HCS).
The product is not classified as hazardous according to the HCS regulation. This substance is not classified as dangerous according to Directive 67/548/EEC and Regulation (EC) No. 1272/2008 (EU-GHS/CLP).
Labelling according to Regulation (EC) No 1272/2008 Void
Hazard pictograms Void
Signal word Void
Hazard statements Void
Classification system: NFPA ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 0
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable
Target Organ(s): Liver, Kidney
Other hazards. May be harmful if inhaled and can cause irritation to the respiratory tract. May be harmful if absorbed through the skin causing skin irritation. May cause eye irritation. May be harmful if swallowed.
Results of PBT and vPvB assessment
PBT: Not applicable
vPvB: Not applicable

MATERIAL SAFETY DATA SHEET

Product Title: dTTP, 100mM

SECTION 4 — FIRST AID MEASURES

Description of first aid measures

General information: No special measures required.

After inhalation: Supply fresh air; consult doctor for artificial respiration.

After skin contact: Wash with soap and water.

After eye contact: Flush opened eye for several minutes under running water.

After swallowing: Rinse mouth with water. If symptoms persist consult doctor.

Information for doctor:

Most important symptoms and effects, both acute and delayed None

Indication of any immediate medical attention and special treatment needed No further relevant information available

SECTION 5 — FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing agents: CO₂, alcohol-resistant foam or water spray.

Special hazards arising from the substance or mixture None known

Advice for firefighters No special advice

Protective equipment: Wear a breathing apparatus that is self contained.

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures Avoid dust formation.

Environmental precautions: Do not allow to enter sewers/ drains or ground water.

Methods and material for containment and cleaning up: Sweep up. Keep in a suitable closed container for disposing.

Reference to other sections No dangerous substances are released.

See Section 7 for information on safe handling.

See Section 13 for disposal information.

SECTION 7 — HANDLING AND STORAGE

Handling:

Precautions for safe handling Provide exhaust ventilation where dust forms.

Information about protection against explosions and fires: Use normal fire protection measures.

Conditions for safe storage, including any incompatibilities

Storage: Store in a well ventilated, cool place while keeping the container tightly closed.

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Recommended storage temperature is -20°C.

Further information about storage conditions: None.

Specific end use(s) No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dTTP, 100mM

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Control parameters

Components with limit values that require monitoring at the workplace: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls**Personal protective equipment:**

Breathing equipment: For protection from dusts, use type N95 (US) or type P1 (EN 143) dust masks.

Protection of hands: Use protected gloves for prolonged or repeated exposure.

Protective gloves Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection: Safety goggles are recommended.

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties**General Information****Appearance:**

Form: Liquid

Color: White

Odor: Odorless

Odour threshold: Not Determined

pH-value at 20 °C (68 °F): Not Determined

Change in condition

Melting point/Melting range: Not Determined

Boiling point/Boiling range: Not determined

Flash point: Not applicable

Flammability (solid, gaseous): Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Product is not self-igniting

Danger of explosion: Product does not present an explosion hazard

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure at 20 °C (68 °F): Not determined

Density at 20 °C (68 °F): Not determined

Relative density: Not determined

Vapour density: Not determined

Evaporation rate: Not determined

Solubility in / Miscibility with Water: Not determined

Partition coefficient (n-octanol/water): Not determined

Viscosity:

Dynamic: Not determined

Kinematic: Not determined

Solvent content:

Organic Solvents: 0.00%

Water: No data available

Solids content: No data available

Other information: No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dTTP, 100mM

SECTION 10 — STABILITY AND REACTIVITY

Reactivity**Chemical stability**

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Possibility of hazardous reactions No dangerous reactions known.

Conditions to avoid No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Hazardous decomposition products are formed in fire conditions including Carbon Oxides, NO_x, Phosphorous oxides, and Lithium oxides.

SECTION 11 — TOXICOLOGICAL INFORMATION

Information on toxicological effects**Acute toxicity:**

LD/LC50 values that are relevant for classification: No data available

Primary irritant effect:

on the skin: Skin irritation.

on the eye: Eye irritation.

Sensitization: No sensitizing effects known.

Additional toxicological information: When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Carcinogenic categories IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

SECTION 12 — ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity: Not available.

Persistence and degradability Not available.

Behavior in environmental systems:

Bioaccumulative potential Not known.

Mobility in soil No further relevant information available.

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes: Water hazard class 1 (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects No further relevant information available.

MATERIAL SAFETY DATA SHEET

Product Title: dTTP, 100mM

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation: Disposal should be in accordance with applicable regional, national and local laws and regulations. Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION 14 — TRANSPORT INFORMATION

UN-Number None

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name None

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es) None

DOT, ADR, ADN, IMDG, IATA Class Void

Packing group None

DOT, ADR, IMDG, IATA Void

Environmental hazards:

Marine pollutant: No

Special precautions for user Not applicable

Transport in bulk according to Annex II of MARPOL73/78 and the IBC code Not applicable

UN "Model Regulation": -

SECTION 15 — REGULATORY INFORMATION

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

Section 355 (extremely hazardous substances): None of the ingredients are listed.

Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Carcinogen categories

EPA (Environmental Protection Agency) None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH) None of the ingredients are listed.

MAK (German Maximum Workplace Concentration) None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health) None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration) None of the ingredients are listed.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out. This product does not need to be labeled in accordance with EC directives.

MATERIAL SAFETY DATA SHEET

Product Title: dTTP, 100mM

SECTION 16 — OTHER INFORMATION

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS

Empirical Bioscience

2007 Eastcastle Dr. SE

Grand Rapids, MI 49508 U.S.A.

1-877.479.9949

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50

* **Data compared to the previous version altered.**