Kit Components

Product code	Description
G7130	**DeadEnd™ Colorimetric TUNEL System**

Components:

G7131	DeadEnd™ Colorimetric TUNEL System
G7132	DeadEnd™ Colorimetric TUNEL System +4, Pt 2

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: **Equilibration Buffer**

Article number: G327
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 Classification of the substance or mixture
Classification according to the Hazard Communication Standard (HCS)

Health hazard

Carc. 1A H350i May cause cancer by inhalation.

Environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labeled according to the CLP regulation.
Hazard pictograms GHS08, GHS09
Signal word Danger

Hazard-determining components of labeling:
dimethylarsinic acid
Cobalt chloride
Hazard statements
H350i May cause cancer by inhalation.
H411 Toxic to aquatic life with long lasting effects.
Precautionary statements
P281 Use personal protective equipment as required.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Equilibration Buffer

(Contd. of page 1)

P273 Avoid release to the environment.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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):
Suspected Carcinogen
Environmental Toxin
Environmental Hazard
Primary route(s) of entry:
Inhalation
Oral
Target Organ(s): Not applicable or unknown
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

*
3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components:		
75-60-5	dimethylarsinic acid Acute Tox. 3, H301; Acute Tox. 3, H331; Carc. 2, H351; Aquatic Chronic 1, H410	1.0-5.0%
7646-79-9	Cobalt chloride Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1B, H350i; Repr. 1B, H360F; Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Acute Tox. 4, H302; Skin Sens. 1, H317	<0.1%

Additional information: For the wording of the listed risk phrases refer to section 15.

*
4: First-aid measures

4.1 Description of first aid measures
After inhalation: If the patient feels unwell or is concerned, obtain medical advice.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 *Reviewed on 02/15/2016*

Trade name: Equilibration Buffer

(Contd. of page 2)

4.2 Most important symptoms and effects, both acute and delayed *None*
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture *None known*
5.3 Advice for firefighters *In the case of fire, wear respiratory protective equipment and chemical protective suit.*

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Wear protective clothing.
6.2 Environmental precautions:
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to Section 13.
Ensure adequate ventilation.
6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7: Handling and storage

7.1 Precautions for safe handling
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Work only in fume cabinet.
Information about protection against explosions and fires:
Keep respiratory protective device available.
The product is not flammable.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *None.*
7.3 Specific end use(s) *No further relevant information available.*

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Equilibration Buffer

(Contd. of page 3)

*

8: Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace:	
7646-79-9 Cobalt chloride	
PEL	Long-term value: 0.1* mg/m³ as Co; *for metal dust and fume
REL	Long-term value: 0.05 mg/m³ as Co; metal dust & fume
TLV	Long-term value: 0.02 mg/m³ as Co, BEI

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

8.2 Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Ensure that washing facilities are available at the work place.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Do not eat or drink while working.

Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves

Select the glove material considering penetration time, rate of diffusion and degradation time.

It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

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 glasses

Use equipment for eye protection tested and approved under government NIOSH standards.

*

9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:	
Form:	Fluid
Color:	Colorless
Odor:	Not determined
Odor threshold:	Not determined.
pH-value at 20 °C (68 °F):	6.8
Change in condition	
Melting point/Melting range:	0 °C (32 °F)

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Equilibration Buffer

(Contd. of page 4)

Boiling point/Boiling range:	100 °C (212 °F)
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not determined.
Density at 20 °C (68 °F):	1.01 g/cm³ (8.428 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Water:	96.8 %
Solids content:	3.2 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.

LD/LC50 values that are relevant for classification:		
75-60-5 dimethylarsinic acid		
Oral	LD50	644 mg/kg (Rat)
7646-79-9 Cobalt chloride		
Oral	LD50	80 mg/kg (Rat)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Equilibration Buffer

(Contd. of page 5)

Primary irritant effect:
on the skin: *Based on available data, the classification criteria are not met.*
on the eye: *Based on available data, the classification criteria are not met.*
Sensitization: *Based on available data, the classification criteria are not met.*
Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
75-60-5	dimethylarsinic acid	2B
7646-79-9	Cobalt chloride	2B

NTP (National Toxicology Program)
None of the ingredients are listed.

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

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: *Not harmful to the aquatic environment*
12.2 Persistence and degradability *Not available*
12.3 Bioaccumulative potential *Not known*
12.4 Mobility in soil *No further relevant information available.*
Ecotoxical effects:
Remark: *Toxic for fish*
Additional ecological information:
General notes:
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
12.5 Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*
12.6 Other adverse effects *No further relevant information available.*

*

13: Disposal considerations

13.1 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.*

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Equilibration Buffer

(Contd. of page 6)

*

14: Transport information

14.1 UN-Number **DOT, ADR, ADN, IMDG, IATA**	Not hazardous for transportation Void
14.2 UN proper shipping name **DOT, ADR, ADN, IMDG, IATA**	None Void
14.3 Transport hazard class(es)	None
DOT, ADR, ADN, IMDG, IATA **Class**	Void
14.4 Packing group **DOT, ADR, IMDG, IATA**	None Void
14.5 Environmental hazards: **Marine pollutant:**	No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Void

*

15: Regulatory information

15.1 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):	
75-60-5	dimethylarsinic acid

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

Proposition 65

Chemicals known to cause cancer:	
75-60-5	dimethylarsinic acid

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.

Cancerogenity categories

EPA (Environmental Protection Agency)		
75-60-5	dimethylarsinic acid	D

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

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Equilibration Buffer

(Contd. of page 7)

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

National regulations:

Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: Internation Civil Aviation Organization
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
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Acute Tox. 3: Acute toxicity, Hazard Category 3
Acute Tox. 4: Acute toxicity, Hazard Category 4
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Muta. 2: Germ cell mutagenicity, Hazard Category 2
Carc. 1A: Carcinogenicity, Hazard Category 1Ai
Carc. 1B: Carcinogenicity, Hazard Category 1B
Carc. 2: Carcinogenicity, Hazard Category 2
Repr. 1B: Reproductive toxicity, Hazard Category 1B
Aquatic Acute 1: Hazardous to the aquatic environment - AcuteHazard, Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
Aquatic Chronic 2: Hazardous to the aquatic environment - Chronic Hazard, Category 2

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: **Terminal deoxynucleotidy tranferase,**

Article number: M828
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 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.

2.2 Label elements
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 = 1
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 1
Fire = 1
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Not applicable
Target Organ(s): May cause Kidney damage (Nephrotoxin)
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Terminal deoxynucleotidy tranferase,

(Contd. of page 1)

vPvB: Not applicable.

*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components:		
56-81-5	glycerol	25-50%

Additional information: For the wording of the listed risk phrases refer to section 15.

*

4: First-aid measures

4.1 Description of first aid measures
General information: No special measures required.
After inhalation: If the patient feels unwell or is concerned, obtain medical advice.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.
4.2 Most important symptoms and effects, both acute and delayed None
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture None known
5.3 Advice for firefighters
No special advice
No special advice
Protective equipment: No special measures required.

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures Not required.
6.2 Environmental precautions:
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6.4 Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Terminal deoxynucleotidy tranferase,

(Contd. of page 2)

*

7: Handling and storage

7.1 Precautions for safe handling No special measures required.
Information about protection against explosions and fires: No special measures required.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
7.3 Specific end use(s) No further relevant information available.

*

8: Exposure controls/personal protection

8.1 Control parameters

Components with limit values that require monitoring at the workplace:	
56-81-5 glycerol	
PEL	Long-term value: 15* 5** mg/m³ mist; *total dust **respirable fraction
TLV	TLV withdrawn-insufficient data human occup. exp.

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

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Breathing equipment: Not required.
Protection of hands: Not required.
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: Not required.

*

9: Physical and chemical properties

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

Form:	Fluid
Color:	Colorless
Odor:	Not determined
Odor threshold:	Not determined.
pH-value at 20 °C (68 °F):	6.4
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
Flash point:	> 100 °C (> 212 °F)
Flammability (solid, gaseous):	Not applicable.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Terminal deoxynucleotidy tranferase,

(Contd. of page 3)

Ignition temperature:	400 °C (752 °F)
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	0.9 Vol %
Upper:	Not determined.
Vapor pressure at 20 °C (68 °F):	0.1 hPa
Density at 20 °C (68 °F):	1.145 g/cm³ (9.555 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	50.0 %
Water:	48.5 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

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.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Terminal deoxynucleotidy tranferase,

(Contd. of page 4)

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

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical 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.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*

13: Disposal considerations

13.1 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.

*

14: Transport information

14.1 UN-Number **DOT, ADR, ADN, IMDG, IATA**	Not hazardous for transportation Void
14.2 UN proper shipping name **DOT, ADR, ADN, IMDG, IATA**	None Void
14.3 Transport hazard class(es) **DOT, ADR, ADN, IMDG, IATA** **Class**	None Void
14.4 Packing group **DOT, ADR, IMDG, IATA**	None Void
14.5 Environmental hazards: **Marine pollutant:**	 No

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Terminal deoxynucleotidy tranferase,

(Contd. of page 5)

14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Void

*

15: Regulatory information

15.1 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 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.

Cancerogenity categories

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

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

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

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

*

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Terminal deoxynucleotidy tranferase,

(Contd. of page 6)

Ph:(608)274-4330

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: Internation Civil Aviation Organization
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
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: Proteinase K

Article number: V302
CAS Number:
39450-01-6
EC number:
254-457-8
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 Classification of the substance or mixture
Classification according to the Hazard Communication Standard (HCS)

Health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
STOT SE 3 H335 May cause respiratory irritation.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labeled according to the CLP regulation.
Hazard pictograms GHS07, GHS08
Signal word Danger

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 1)

Hazard-determining components of labeling:
Proteinase, Tritirachium album serine
Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
Precautionary statements

P285	*In case of inadequate ventilation wear respiratory protection.*
P261	*Avoid breathing dust/fume/gas/mist/vapors/spray*
P305+P351+P338	*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
P321	*Specific treatment (see on this label).*
P405	*Store locked up.*
P501	*Dispose of contents/container in accordance with local/regional/national/international regulations.*

Classification system:
NFPA ratings (scale 0 - 4)
Health = 1
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
*Health = *1*
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200):
Irritant
Sensitizer
Primary route(s) of entry:
Dermal
Inhalation
Oral
Target Organ(s):
Affects Pulmonary system (Lungs)
Risk of damage to eyes
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*

*
3: Composition/information on ingredients

3.1 Chemical characterization: Substances
CAS No. Description
39450-01-6 Proteinase, Tritirachium album serine
Identification number(s)
EC number: *254-457-8*

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 2)

*

4: First-aid measures

4.1 Description of first aid measures
After inhalation:
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
Seek medical treatment in case of complaints.
After skin contact:
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
After eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.
4.2 Most important symptoms and effects, both acute and delayed Allergic reactions
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO_2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture None known
5.3 Advice for firefighters No special advice

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Avoid formation of dust.
Wear protective clothing.
6.2 Environmental precautions: No special measures required.
6.3 Methods and material for containment and cleaning up:
Dispose contaminated material as waste according to Section 13.
Pick up mechanically.
Ensure adequate ventilation.
6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 13 for disposal information.

7: Handling and storage

7.1 Precautions for safe handling
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Work only in fume cabinet.
Information about protection against explosions and fires:
Keep respiratory protective device available.
The product is not flammable.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 3)

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
7.3 Specific end use(s) No further relevant information available.

*

8: Exposure controls/personal protection

8.1 Control parameters
Components with limit values that require monitoring at the workplace: Not required.
Additional information: The lists that were valid during the creation were used as basis.

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Do not eat or drink while working.
Clean skin thoroughly immediately after handling the product.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Protection of hands:
Protective gloves
Select the glove material considering penetration time, rate of diffusion and degradation time.
It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.
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.
Eye protection:
Safety glasses
Use equipment for eye protection tested and approved under government NIOSH standards.

*

9: Physical and chemical properties

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

Form:	Solid
Color:	Colorless
Odor:	Not determined
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 4)

Flash point:	Not applicable.
Flammability (solid, gaseous):	Product is not flammable.
Ignition temperature:	
Decomposition temperature:	Not determined.
Auto igniting:	Not determined.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not applicable.
Density at 20 °C (68 °F):	1.1 g/cm³ (9.18 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Soluble.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Organic solvents:	0.0 %
Solids content:	100.0 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin:
Causes skin irritation.
on the eye:
Causes serious eye irritation.
Sensitization:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 5)

Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)
Substance is not listed.

NTP (National Toxicology Program)
Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Not available
Additional ecological information:
General notes: Generally not hazardous for water.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*

13: Disposal considerations

13.1 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.

14: Transport information

14.1 UN-Number **DOT, ADR, ADN, IMDG, IATA**	Not hazardous for transportation Void
14.2 UN proper shipping name **DOT, ADR, ADN, IMDG, IATA**	None Void
14.3 Transport hazard class(es)	None
DOT, ADR, ADN, IMDG, IATA **Class**	 Void
14.4 Packing group	None

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 6)

DOT, ADR, IMDG, IATA	Void
14.5 Environmental hazards: **Marine pollutant:**	No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Void

*

15: Regulatory information

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

Section 355 (extremely hazardous substances):
Substance is not listed.

Section 313 (Specific toxic chemical listings):
Substance is not listed.

TSCA (Toxic Substances Control Act):
Substance is not listed.

Proposition 65

Chemicals known to cause cancer:
Substance is not listed.

Chemicals known to cause reproductive toxicity for females:
Substance is not listed.

Chemicals known to cause reproductive toxicity for males:
Substance is not listed.

Chemicals known to cause developmental toxicity:
Substance is not listed.

Cancerogenity categories

EPA (Environmental Protection Agency)
Substance is not listed.

TLV (Threshold Limit Value established by ACGIH)
Substance is not listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.

National regulations:

Water hazard class: Generally not hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Proteinase K

(Contd. of page 7)

Department issuing SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

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
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: Streptavidin HRP

Article number: G714
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 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.

2.2 Label elements
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): Not applicable or unknown
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Streptavidin HRP

(Contd. of page 1)

vPvB: *Not applicable.*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components: *Void*
Additional information: *For the wording of the listed risk phrases refer to section 15.*

*

4: First-aid measures

4.1 Description of first aid measures
General information: *No special measures required.*
After inhalation: *If the patient feels unwell or is concerned, obtain medical advice.*
After skin contact: *Generally the product does not irritate the skin.*
After eye contact: *Rinse opened eye for several minutes under running water.*
After swallowing: *If the patient feels unwell or is concerned, obtain medical advice.*
4.2 Most important symptoms and effects, both acute and delayed *None*
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture *None known*
5.3 Advice for firefighters *No special advice*
Protective equipment: *No special measures required.*

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures *Not required.*
6.2 Environmental precautions: *Dilute with plenty of water.*
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6.4 Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7: Handling and storage

7.1 Precautions for safe handling *No special measures required.*
Information about protection against explosions and fires: *The product is not flammable.*

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Streptavidin HRP

(Contd. of page 2)

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *None.*
7.3 Specific end use(s) *No further relevant information available.*

*

8: Exposure controls/personal protection

8.1 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.*

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Breathing equipment: *Not required.*
Protection of hands: *Not required.*
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: *Not required.*

*

9: Physical and chemical properties

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

Form:	*Fluid*
Color:	*Colorless*
Odor:	*Not determined*
Odor threshold:	*Not determined.*
pH-value at 20 °C (68 °F):	*7*
Change in condition	
Melting point/Melting range:	*0 °C (32 °F)*
Boiling point/Boiling range:	*100 °C (212 °F)*
Flash point:	*Not applicable.*
Flammability (solid, gaseous):	*Not applicable.*
Ignition temperature:	
Decomposition temperature:	*Not determined.*
Auto igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product does not present an explosion hazard.*
Explosion limits:	
Lower:	*Not determined.*

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Streptavidin HRP

(Contd. of page 3)

Upper:	Not determined.
Vapor pressure:	Not determined.
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Water:	99.9 %
Solids content:	0.1 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

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.

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

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Streptavidin HRP

(Contd. of page 4)

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Not available
Additional ecological information:
General notes: Generally not hazardous for water.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*

13: Disposal considerations

13.1 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.

*

14: Transport information

14.1 UN-Number	Not hazardous for transportation
14.2 UN proper shipping name	None
14.3 Transport hazard class(es)	None
14.4 Packing group	None
14.5 Environmental hazards: **Marine pollutant:**	None known No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

*

15: Regulatory information

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

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

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Streptavidin HRP

(Contd. of page 5)

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

All ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

1405-41-0	Gentamycin Sulfate

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.

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

National regulations:

Water hazard class: Generally not hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

*

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 *Reviewed on 02/15/2016*

Trade name: Streptavidin HRP

(Contd. of page 6)

TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
**** Data compared to the previous version altered.***

US

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: **Biotin Nucleotide Mix**

Article number: G715
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 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.

2.2 Label elements
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): Not applicable or unknown
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Biotin Nucleotide Mix

(Contd. of page 1)

vPvB: *Not applicable.*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components: *Void*
Additional information: *For the wording of the listed risk phrases refer to section 15.*

*

4: First-aid measures

4.1 Description of first aid measures
General information: *No special measures required.*
After inhalation: *If the patient feels unwell or is concerned, obtain medical advice.*
After skin contact: *Generally the product does not irritate the skin.*
After eye contact: *Rinse opened eye for several minutes under running water.*
After swallowing: *If the patient feels unwell or is concerned, obtain medical advice.*
4.2 Most important symptoms and effects, both acute and delayed *None*
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture *None known*
5.3 Advice for firefighters *No special advice*
Protective equipment: *No special measures required.*

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures *Not required.*
6.2 Environmental precautions: *Dilute with plenty of water.*
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6.4 Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7: Handling and storage

7.1 Precautions for safe handling *No special measures required.*
Information about protection against explosions and fires: *The product is not flammable.*

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Biotin Nucleotide Mix

(Contd. of page 2)

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
7.3 Specific end use(s) No further relevant information available.

*

8: Exposure controls/personal protection

8.1 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.

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Breathing equipment: Not required.
Protection of hands: Not required.
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: Not required.

*

9: Physical and chemical properties

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

Form:	Fluid
Color:	Colorless
Odor:	Not determined
Odor threshold:	Not determined.
pH-value at 20 °C (68 °F):	7.6
Change in condition	
Melting point/Melting range:	0 °C (32 °F)
Boiling point/Boiling range:	100 °C (212 °F)
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Biotin Nucleotide Mix

(Contd. of page 3)

Upper:	Not determined.
Vapor pressure:	Not determined.
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Water:	99.8 %
Solids content:	0.2 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

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.

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

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Biotin Nucleotide Mix

(Contd. of page 4)

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Not available
Additional ecological information:
General notes: Generally not hazardous for water.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*

13: Disposal considerations

13.1 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.

*

14: Transport information

14.1 UN-Number	Not hazardous for transportation
14.2 UN proper shipping name	None
14.3 Transport hazard class(es)	None
14.4 Packing group	None
14.5 Environmental hazards: **Marine pollutant:**	None known No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

*

15: Regulatory information

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

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

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 Reviewed on 02/15/2016

Trade name: Biotin Nucleotide Mix

(Contd. of page 5)

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

All 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.

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

None of the ingredients are listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

National regulations:

Water hazard class: Generally not hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

*

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/15/2016 *Reviewed on 02/15/2016*

Trade name: Biotin Nucleotide Mix

(Contd. of page 6)

TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
**** Data compared to the previous version altered.***

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: SSC, 20X

Article number: G329
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 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.

2.2 Label elements
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): Not applicable or unknown
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: SSC, 20X

(Contd. of page 1)

vPvB: *Not applicable.*

*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components: *Void*
Additional information: *For the wording of the listed risk phrases refer to section 15.*

*

4: First-aid measures

4.1 Description of first aid measures
General information: *No special measures required.*
After inhalation: *If the patient feels unwell or is concerned, obtain medical advice.*
After skin contact: *Generally the product does not irritate the skin.*
After eye contact: *Rinse opened eye for several minutes under running water.*
After swallowing: *If the patient feels unwell or is concerned, obtain medical advice.*
4.2 Most important symptoms and effects, both acute and delayed *None*
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture *None known*
5.3 Advice for firefighters *No special advice*
Protective equipment: *No special measures required.*

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures *Not required.*
6.2 Environmental precautions:
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6.4 Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7: Handling and storage

7.1 Precautions for safe handling *No special measures required.*

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: SSC, 20X

(Contd. of page 2)

Information about protection against explosions and fires: *The product is not flammable.*

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *None.*
7.3 Specific end use(s) *No further relevant information available.*

*
8: Exposure controls/personal protection

8.1 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.*

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Breathing equipment: *Not required.*
Protection of hands: *Not required.*
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: *Not required.*

*
9: Physical and chemical properties

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

Form:	*Fluid*
Color:	*Colorless*
Odor:	*Not determined*
Odor threshold:	*Not determined.*
pH-value at 20 °C (68 °F):	*7*
Change in condition	
Melting point/Melting range:	*Undetermined.*
Boiling point/Boiling range:	*100 °C (212 °F)*
Flash point:	*Not applicable.*
Flammability (solid, gaseous):	*Not applicable.*
Ignition temperature:	
Decomposition temperature:	*Not determined.*
Auto igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product does not present an explosion hazard.*

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: SSC, 20X

(Contd. of page 3)

Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not determined.
Density at 20 °C (68 °F):	1.165 g/cm³ (9.722 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Water:	74.5 %
Solids content:	26.4 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
7647-01-0	hydrogen chloride	3

NTP (National Toxicology Program)
None of the ingredients are listed.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: SSC, 20X

(Contd. of page 4)

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

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical 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.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*

13: Disposal considerations

13.1 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.

*

14: Transport information

14.1 UN-Number **DOT, ADR, ADN, IMDG, IATA**	Not hazardous for transportation Void
14.2 UN proper shipping name **DOT, ADR, ADN, IMDG, IATA**	None Void
14.3 Transport hazard class(es) **DOT, ADR, ADN, IMDG, IATA** **Class**	None Void
14.4 Packing group **DOT, ADR, IMDG, IATA**	None Void
14.5 Environmental hazards: **Marine pollutant:**	 No

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: SSC, 20X

(Contd. of page 5)

14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Void

*

15: Regulatory information

15.1 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 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.

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

7647-01-0	hydrogen chloride	A4

NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

National regulations:

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: SSC, 20X

(Contd. of page 6)

Ph:(608)274-4330

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: Internation Civil Aviation Organization
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
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: DAB 20X Chromogen

Article number: G716
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 Classification of the substance or mixture
Classification according to the Hazard Communication Standard (HCS)

Health hazard

Carc. 2 H351 Suspected of causing cancer.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The product is classified and labeled according to the CLP regulation.
Hazard pictograms GHS08
Signal word Warning

Hazard-determining components of labeling:
biphenyl-3,3',4,4'-tetrayltetraammoniumtetrachloride
Hazard statements
H351 Suspected of causing cancer.
Precautionary statements
P281 Use personal protective equipment as required.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 1)

Classification system:
NFPA ratings (scale 0 - 4)
Health = 1
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 1
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Suspected Carcinogen
Primary route(s) of entry: Oral
Target Organ(s): Not applicable or unknown
2.3 Other hazards Limited evidence of carcinogenic effect.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components:		
7411-49-6	biphenyl-3,3',4,4'-tetrayltetraammoniumtetrachloride Carc. 2, H351; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	<2.00%

Additional information: For the wording of the listed risk phrases refer to section 15.

*

4: First-aid measures

4.1 Description of first aid measures
After inhalation: If the patient feels unwell or is concerned, obtain medical advice.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.
4.2 Most important symptoms and effects, both acute and delayed None
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture None known
5.3 Advice for firefighters No special advice

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 2)

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Wear protective clothing.
6.2 Environmental precautions: Dilute with plenty of water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to Section 13.
Ensure adequate ventilation.
6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 13 for disposal information.

7: Handling and storage

7.1 Precautions for safe handling
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Information about protection against explosions and fires: The product is not flammable.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
7.3 Specific end use(s) No further relevant information available.

*

8: Exposure controls/personal protection

8.1 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.

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat or drink while working.
Breathing equipment:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Protection of hands:
Protective gloves
Select the glove material considering penetration time, rate of diffusion and degradation time.
It is recommended that the selected protective gloves be tested and approved under NIOSH or EU Directive 89/686/EEC and the standard EN 374 derived from it.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 3)

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 glasses
Use equipment for eye protection tested and approved under government NIOSH standards.

*

9: Physical and chemical properties

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

Form:	*Fluid*
Color:	*Colorless*
Odor:	*Not determined*
Odor threshold:	*Not determined.*
Change in condition	
Melting point/Melting range:	*0 °C (32 °F)*
Boiling point/Boiling range:	*100 °C (212 °F)*
Flash point:	*Not applicable.*
Flammability (solid, gaseous):	*Not applicable.*
Ignition temperature:	
Decomposition temperature:	*Not determined.*
Auto igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product does not present an explosion hazard.*
Explosion limits:	
Lower:	*Not determined.*
Upper:	*Not determined.*
Vapor pressure:	*Not determined.*
Density:	*Not determined.*
Relative density	*Not determined.*
Vapor density	*Not determined.*
Evaporation rate	*Not determined.*
Solubility in / Miscibility with	
Water:	*Fully miscible.*
Partition coefficient (n-octanol/water):	*Not determined.*
Viscosity:	
Dynamic:	*Not determined.*
Kinematic:	*Not determined.*
Organic solvents:	*0.0 %*
Water:	*98.0 %*
Solids content:	*2.0 %*
9.2 Other information	*No further relevant information available.*

US

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 4)

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

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.

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

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Not available
Additional ecological information:
General notes: Generally not hazardous for water.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 5)

*

13: Disposal considerations

13.1 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.

*

14: Transport information

14.1 UN-Number **DOT, ADR, ADN, IMDG, IATA**	Not hazardous for transportation Void
14.2 UN proper shipping name **DOT, ADR, ADN, IMDG, IATA**	None Void
14.3 Transport hazard class(es)	None
DOT, ADR, ADN, IMDG, IATA **Class**	 Void
14.4 Packing group **DOT, ADR, IMDG, IATA**	None Void
14.5 Environmental hazards: **Marine pollutant:**	 No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
UN "Model Regulation":	Void

*

15: Regulatory information

15.1 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 ingredients are listed.

Proposition 65

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

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 6)

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.

Cancerogenity categories

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

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

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

National regulations:
Additional classification according to Decree on Hazardous Materials: Can cause cancer.

Water hazard class: Generally not hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: Internation Civil Aviation Organization
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
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Chromogen

(Contd. of page 7)

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Carc. 2: Carcinogenicity, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
**** Data compared to the previous version altered.***

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: DAB 20X Buffer

Article number: G717
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 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.

2.2 Label elements
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): Not applicable or unknown
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Buffer

(Contd. of page 1)

vPvB: Not applicable.

*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components:		
77-86-1	2-Amino-2-(hydroxymethyl)-1,3-propanediol Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	1.0-5.0%

Additional information: For the wording of the listed risk phrases refer to section 15.

*

4: First-aid measures

4.1 Description of first aid measures
General information: No special measures required.
After inhalation: If the patient feels unwell or is concerned, obtain medical advice.
After skin contact: Generally the product does not irritate the skin.
After eye contact: Rinse opened eye for several minutes under running water.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.
4.2 Most important symptoms and effects, both acute and delayed None
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture None known
5.3 Advice for firefighters
No special advice
No special advice
Protective equipment: No special measures required.

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures Not required.
6.2 Environmental precautions: Dilute with plenty of water.
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6.4 Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Buffer

(Contd. of page 2)

*

7: Handling and storage

7.1 Precautions for safe handling No special measures required.
Information about protection against explosions and fires: The product is not flammable.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: None.
7.3 Specific end use(s) No further relevant information available.

*

8: Exposure controls/personal protection

8.1 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.

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Breathing equipment: Not required.
Protection of hands: Not required.
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: Not required.

*

9: Physical and chemical properties

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

Form:	Fluid
Color:	Colorless
Odor:	Not determined
Odor threshold:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100 °C (212 °F)
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Buffer

(Contd. of page 3)

Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
Vapor pressure:	Not determined.
Density:	Not determined.
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Water:	82.0 %
Solids content:	10.0 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

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.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Buffer

(Contd. of page 4)

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

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Not available
Additional ecological information:
General notes: Generally not hazardous for water.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*

13: Disposal considerations

13.1 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.

*

14: Transport information

14.1 UN-Number	Not hazardous for transportation
14.2 UN proper shipping name	None
14.3 Transport hazard class(es)	None
14.4 Packing group	None
14.5 Environmental hazards: **Marine pollutant:**	None known No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

US

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Buffer

(Contd. of page 5)

*

15: Regulatory information

15.1 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 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.

Cancerogenity categories

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

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

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

National regulations:

Water hazard class: Generally not hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

*

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: DAB 20X Buffer

(Contd. of page 6)

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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
**** Data compared to the previous version altered.***

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

*

1: Identification

1.1 Product identifier
Trade name: **Hydrogen Peroxide 20X**

Article number: G718
Application of the substance / the mixture Laboratory chemicals

1.3 Details of the supplier of the safety data sheet
Manufacturer/Supplier:

Promega Corporation
2800 Woods Hollow Road
Madison, WI 53711
U.S.A.
1-800-356-9526 or (608)-274-4330

Information department: SDS author: Regulatory.Affairs@promega.com
1.4 Emergency telephone number:
For Chemical Emergency Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

*

2: Hazard(s) identification

2.1 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.

2.2 Label elements
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): Not applicable or unknown
2.3 Other hazards
This mixture has not been tested to determine the overall health hazard; therefore in accordance with 29CFR1910.1200, the data reported above pertains to the hazardous ingredients of this mixture.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: Hydrogen Peroxide 20X

(Contd. of page 1)

vPvB: *Not applicable.*

3: Composition/information on ingredients

3.2 Chemical characterization: Mixtures
Description:
The product is a mixture of the hazardous substances listed below along with unlisted nonhazardous substances. The exact concentration percentages of the hazardous substances are withheld as a Promega Corp. trade secret.

Dangerous components: *Void*
Additional information: *For the wording of the listed risk phrases refer to section 15.*

*

4: First-aid measures

4.1 Description of first aid measures
General information: *No special measures required.*
After inhalation: *If the patient feels unwell or is concerned, obtain medical advice.*
After skin contact: *Generally the product does not irritate the skin.*
After eye contact: *Rinse opened eye for several minutes under running water.*
After swallowing: *If the patient feels unwell or is concerned, obtain medical advice.*
4.2 Most important symptoms and effects, both acute and delayed *None*
4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
5.2 Special hazards arising from the substance or mixture *None known*
5.3 Advice for firefighters *No special advice*
Protective equipment: *No special measures required.*

*

6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures *Not required.*
6.2 Environmental precautions: *Dilute with plenty of water.*
6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
6.4 Reference to other sections
No dangerous substances are released.
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7: Handling and storage

7.1 Precautions for safe handling *No special measures required.*
Information about protection against explosions and fires: *The product is not flammable.*

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: Hydrogen Peroxide 20X

(Contd. of page 2)

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *No special requirements.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *None.*
7.3 Specific end use(s) *No further relevant information available.*

*
8: Exposure controls/personal protection

8.1 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.*

8.2 Exposure controls
Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Breathing equipment: *Not required.*
Protection of hands: *Not required.*
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: *Not required.*

*
9: Physical and chemical properties

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

Form:	*Fluid*
Color:	*Colorless*
Odor:	*Not determined*
Odor threshold:	*Not determined.*
Change in condition	
Melting point/Melting range:	*0 °C (32 °F)*
Boiling point/Boiling range:	*100 °C (212 °F)*
Flash point:	*Not applicable.*
Flammability (solid, gaseous):	*Not applicable.*
Ignition temperature:	
Decomposition temperature:	*Not determined.*
Auto igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product does not present an explosion hazard.*
Explosion limits:	
Lower:	*Not determined.*
Upper:	*Not determined.*

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: Hydrogen Peroxide 20X

(Contd. of page 3)

Vapor pressure:	Not determined.
Density at 20 °C (68 °F):	1.0027 g/cm³ (8.368 lbs/gal)
Relative density	Not determined.
Vapor density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	0.0 %
Water:	99.4 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity No further relevant information available.
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions No dangerous reactions known.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity: Based on available data, the classification criteria are not met.
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Based on available data, the classification criteria are not met.
on the eye: Based on available data, the classification criteria are not met.
Sensitization: Based on available data, the classification criteria are not met.
Additional toxicological information:

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
7722-84-1	hydrogen peroxide solution	3

NTP (National Toxicology Program)
None of the ingredients are listed.

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

*

12: Ecological information

12.1 Toxicity
Aquatic toxicity: Not harmful to the aquatic environment

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: Hydrogen Peroxide 20X

(Contd. of page 4)

12.2 Persistence and degradability Not available
12.3 Bioaccumulative potential Not known
12.4 Mobility in soil No further relevant information available.
Ecotoxical effects:
Remark: Not available
Additional ecological information:
General notes: Generally not hazardous for water.
12.5 Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.
12.6 Other adverse effects No further relevant information available.

*
13: Disposal considerations

13.1 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.

*
14: Transport information

14.1 UN-Number	Not hazardous for transportation
14.2 UN proper shipping name	None
14.3 Transport hazard class(es)	None
14.4 Packing group	None
14.5 Environmental hazards: **Marine pollutant:**	None known No
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.

*
15: Regulatory information

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

Section 355 (extremely hazardous substances):	
7722-84-1	hydrogen peroxide solution

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

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

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 02/16/2016 Reviewed on 02/15/2016

Trade name: Hydrogen Peroxide 20X

(Contd. of page 5)

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.

Cancerogenity categories

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

TLV (Threshold Limit Value established by ACGIH)		
7722-84-1	hydrogen peroxide solution	A3

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

National regulations:

Water hazard class: Generally not hazardous for water.
15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

*

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 SDS:
Promega Corporation
Environmental Health and Safety Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
GHS: Globally Harmonized System of Classification and Labeling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
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 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit

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