Kit Components

Product code	Description

G6320	**ApoTox-Glo™ Triplex Assay, 10ml**

Components:

G610	Assay Buffer
G608	GF-AFC Substrate
G609	bis-AAF-R110 Substrate
G810	Caspase-Glo® 3/7 Buffer
G811A	Caspase-Glo® 3/7 Substrate

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

*

1: Identification

1.1 Product identifier
Trade name: Assay Buffer

Article number: G610
1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
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.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

Trade name: Assay Buffer

(Contd. of page 1)

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: *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.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

Trade name: Assay 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
Odour threshold:	Not determined.
pH-value at 20 °C (68 °F):	7.5
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.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

Trade name: Assay Buffer

(Contd. of page 3)

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):	1.007 g/cm³ (8.403 lbs/gal)
Relative density	Not determined.
Vapour 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:	97.4 %
Solids content:	25.9 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity
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:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

Trade name: Assay Buffer

(Contd. of page 4)

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:
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	Not hazardous for transportation
DOT, ADR, ADN, IMDG, IATA	Void
14.2 UN proper shipping name	None
DOT, ADR, ADN, IMDG, IATA	Void
14.3 Transport hazard class(es)	None
DOT, ADR, ADN, IMDG, IATA	
Class	Void

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

Trade name: Assay Buffer

(Contd. of page 5)

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":	-

*

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.

MAK (German Maximum Workplace Concentration)

None of the ingredients are listed.

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

None of the ingredients are listed.

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.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 04/29/2015

Trade name: Assay Buffer

(Contd. of page 6)

*

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:
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

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 *Reviewed on 05/22/2015*

*

1: Identification

1.1 Product identifier
Trade name: GF-AFC Substrate

Article number: G608
1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
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)

Acute Tox. 4 H302 Harmful if swallowed.

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 GHS07
Signal word Warning

Hazard-determining components of labeling:
dimethyl sulfoxide
Hazard statements
H302 Harmful if swallowed.
Precautionary statements
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P330 Rinse mouth.
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 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 1)

Classification system:
NFPA ratings (scale 0 - 4)
Health = 2
Fire = 2
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 2
Fire = 2
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200):
Toxic
Combustible
Primary route(s) of entry: *Oral*
Target Organ(s):
Dermal hazard (Cutaneous hazard)
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

3.2 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:			
67-68-5	dimethyl sulfoxide	Acute Tox. 4, H302	75-100%

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:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
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:
Immediately call a doctor.
Seek immediate 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.

US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 2)

*

5: Fire-fighting measures

5.1 Extinguishing media
Suitable extinguishing agents: Use fire fighting measures that suit the environment.
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.
Wear protective clothing.
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).
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: 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:	
67-68-5 dimethyl sulfoxide	
WEEL	Long-term value: 250 ppm

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.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 3)

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.

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*
Odour threshold:	*Not determined.*
Change in condition	
Melting point/Melting range:	*Undetermined.*
Boiling point/Boiling range:	*189 °C (372 °F)*
Flash point:	*> 55 °C (> 131 °F)*
Flammability (solid, gaseous):	*Not applicable.*
Ignition temperature:	*270 °C (518 °F)*
Decomposition temperature:	*Not determined.*
Auto igniting:	*Product is not selfigniting.*
Danger of explosion:	*Product does not present an explosion hazard.*
Explosion limits:	
Lower:	*1.8 Vol %*
Upper:	*Not determined.*
Vapor pressure at 20 °C (68 °F):	*2.5 hPa (2 mm Hg)*
Density at 20 °C (68 °F):	*1.137 g/cm³ (9.488 lbs/gal)*
Relative density	*Not determined.*
Vapour 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.*

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 4)

Kinematic:	Not determined.
Organic solvents: **VOC content:**	94.3 % 94.3 %
Solids content:	5.7 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity
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:
Oxidizing agents
Strong acids
Strong reducing agents
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
67-68-5 dimethyl sulfoxide		
Oral	LD50	14500 mg/kg (Rat)
Irritation of eyes	acute	500 mg (Rabbit) mild irritation

Primary irritant effect:
on the skin: No irritant effect.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

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 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 5)

*

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
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.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 6)

UN "Model Regulation": -

*

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):

67-68-5	dimethyl sulfoxide

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.

MAK (German Maximum Workplace Concentration)

None of the ingredients are listed.

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

None of the ingredients are listed.

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:

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: GF-AFC Substrate

(Contd. of page 7)

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)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity, Hazard Category 4

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

*

1: Identification

1.1 Product identifier
Trade name: **bis-AAF-R110 Substrate**

Article number: G609
1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
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)

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.

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 GHS07
Signal word Warning
Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
Precautionary statements

P280	Wear protective gloves/protective clothing/eye protection/face protection.
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).
P362	Take off contaminated clothing and wash before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(Contd. of page 1)

P337+P313 If eye irritation persists: Get medical advice/attention.
Classification system:
NFPA ratings (scale 0 - 4)
Health = 1
Fire = 2
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 1
Fire = 2
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): Combustible
Primary route(s) of entry: Oral
Target Organ(s):
Dermal hazard (Cutaneous hazard)
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

3.2 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:		
67-68-5	dimethyl sulfoxide Acute Tox. 4, H302	75-100%
	Bis-AAF-R110, TFA Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	10-15%

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:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
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:
Immediately call a doctor.
Seek immediate medical advice.
4.2 Most important symptoms and effects, both acute and delayed None

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(Contd. of page 2)

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: Use fire fighting measures that suit the environment.
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.
Wear protective clothing.
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).
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: 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:	
67-68-5 dimethyl sulfoxide	
WEEL	Long-term value: 250 ppm

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

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(Contd. of page 3)

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.
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
Odour threshold:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	189 °C (372 °F)
Flash point:	> 55 °C (> 131 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	270 °C (518 °F)
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	1.8 Vol %
Upper:	Not determined.
Vapor pressure at 20 °C (68 °F):	2.5 hPa (2 mm Hg)
Density at 20 °C (68 °F):	1.134 g/cm³ (9.463 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(Contd. of page 4)

Solubility in / Miscibility with	
Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
Organic solvents:	88.6 %
VOC content:	88.6 %
Solids content:	11.4 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity
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:
Oxidizing agents
Strong acids
Strong reducing agents
10.6 Hazardous decomposition products: No dangerous decomposition products known.

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
67-68-5 dimethyl sulfoxide		
Oral	LD50	14500 mg/kg (Rat)
Irritation of eyes	acute	500 mg (Rabbit) mild irritation

Primary irritant effect:
on the skin: No irritant effect.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

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 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(Contd. of page 5)

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 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(Contd. of page 6)

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":	-

*

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):

67-68-5	dimethyl sulfoxide

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.

MAK (German Maximum Workplace Concentration)

None of the ingredients are listed.

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

None of the ingredients are listed.

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.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: bis-AAF-R110 Substrate

(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:
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)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity, Hazard Category 4
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 05/23/2015 Reviewed on 05/22/2015

*

1: Identification

1.1 Product identifier
Trade name: **Caspase-Glo® 3/7 Buffer**

Article number: G810
1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
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.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Buffer

(Contd. of page 1)

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: *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
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.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Buffer

(Contd. of page 2)

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.

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
Odour threshold:	Not determined.
pH-value at 20 °C (68 °F):	7.4
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.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Buffer

(Contd. of page 3)

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.
Vapour 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:	83.6 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity
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:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: No irritant effect.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product is not subject to classification according to internally approved calculation methods for preparations:
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Buffer

(Contd. of page 4)

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:
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	Not hazardous for transportation
DOT, ADR, ADN, IMDG, IATA	Void
14.2 UN proper shipping name	None
DOT, ADR, ADN, IMDG, IATA	Void
14.3 Transport hazard class(es)	None
DOT, ADR, ADN, IMDG, IATA	
Class	Void

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Buffer

(Contd. of page 5)

14.4 Packing group	None
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":	-

*

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.

MAK (German Maximum Workplace Concentration)

127087-87-0	Nonylphenol Ethoxylate	OEL
10043-52-4	Calcium chloride	OEL

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.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Buffer

(Contd. of page 6)

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

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

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

*

1: Identification

1.1 Product identifier
Trade name: **Caspase-Glo® 3/7 Substrate**

Article number: G811A
1.2 Relevant identified uses of the substance or mixture and uses advised against
No further relevant information available.
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)

Acute Tox. 4	H302	Harmful if swallowed.
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 product is classified and labeled according to the CLP regulation.
Hazard pictograms GHS07
Signal word Warning

Hazard-determining components of labeling:
DL-Dithiothreitol
Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(Contd. of page 1)

Precautionary statements

P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P280	Wear protective gloves/protective clothing/eye protection/face protection.
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 = 2
Fire = 1
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 2
Fire = 1
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200):
Toxic
Irritant
Primary route(s) of entry:
Dermal
Inhalation
Oral
Target Organ(s):
May affect Nervous system (Neurotoxin)
Affects Pulmonary system (Lungs)
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:		
3483-12-3	DL-Dithiothreitol Acute Tox. 4, H302; Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	25-50%
125572-95-4	trans-1,2-Diaminocyclohexane-N,N,N′,N′-tetraacetic acid monohydrate Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335	<2.50%

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

US

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(Contd. of page 2)

*
4: First-aid measures

4.1 Description of first aid measures
General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
After inhalation:
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
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:
Immediately call a doctor.
Seek immediate 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

*
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: Do not allow to enter sewers/ surface or ground water.
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.
Information about protection against explosions and fires: No special measures required.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(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:
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.
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. 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:	*Solid*
Color:	*Colorless*
Odor:	*Odorless*
Odour threshold:	*Not determined.*
pH-value:	*Not applicable.*

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(Contd. of page 4)

Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
Flash point:	> 100 °C (> 212 °F)
Flammability (solid, gaseous):	Not determined.
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 applicable.
Density:	Not determined.
Relative density	Not determined.
Vapour density	Not applicable.
Evaporation rate	Not applicable.
Solubility in / Miscibility with	
Water:	Slightly soluble.
Partition coefficient (n-octanol/water):	Not determined.
Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
Organic solvents:	0.0 %
Water:	1.0 %
Solids content:	100.0 %
9.2 Other information	No further relevant information available.

*

10: Stability and reactivity

10.1 Reactivity
10.2 Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
10.3 Possibility of hazardous reactions Reacts with strong acids.
10.4 Conditions to avoid No further relevant information available.
10.5 Incompatible materials: No further relevant information available.
10.6 Hazardous decomposition products:
Carbon monoxide and carbon dioxide
Sulfur oxides (SOx)

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(Contd. of page 5)

*

11: Toxicological information

11.1 Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
3483-12-3 DL-Dithiothreitol		
Oral	LD50	400 mg/kg (Rat)

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

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:
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.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(Contd. of page 6)

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
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":	-

*

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):

3483-12-3	DL-Dithiothreitol
68410-45-7	Gelatins, hydrolyzates
7365-45-9	4-(2-hydroxyethyl)piperazin-1-ylethanesulphonic acid
987-65-5	Adenosine 5´-triphosphate disodium salt
7487-88-9	Sulfuric acid magnesium salt (1:1)
139-33-3	disodium dihydrogenethylenediaminetetraacetate
7732-18-5	water

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/23/2015 Reviewed on 05/22/2015

Trade name: Caspase-Glo® 3/7 Substrate

(Contd. of page 7)

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.

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

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

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
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
Acute Tox. 4: Acute toxicity, Hazard Category 4
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.**