Kit Components

Product code	Description
E2920	**Dual-Glo® Luciferase Assay System**

Components:

E297A	Dual-Glo® Luciferase Assay Substrate
E298	Dual-Glo® Luciferase Buffer
E313	Dual-Glo® Stop and Glo® Substrate
E314	Dual-Glo® Stop & Glo® Buffer

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

* 1 Identification

Product identifier
Trade name: **Dual-Glo® Luciferase Assay Substrate**
Article number: E297A
Application of the substance / the mixture For Laboratory Use

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: chemicalregulatory@promega.com

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

Classification of the substance or mixture

GHS02 Flame

Self-heating substances and mixtures 1 H251 Self-heating: may catch fire.

GHS05 Corrosion

Eye Damage 1 H318 Causes serious eye damage.

GHS07

Acute Toxicity - Oral 4 H302 Harmful if swallowed.
Skin Irritation 2 H315 Causes skin irritation.

Label elements
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 1)

Hazard pictograms

GHS02 GHS05 GHS07

Signal word Danger

Hazard-determining components of labeling:
DL-Dithiothreitol
sodium hydrosulphite
Hazard statements
Self-heating: may catch fire.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Precautionary statements
Keep cool. Protect from sunlight.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If on skin: Wash with plenty of water.
Immediately call a poison center/doctor.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
Maintain air gap between stacks/pallets.
Store bulk masses greater than 0.01 lbs at temperatures not exceeding - 4°F.
Store away from other materials.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Classification system:
NFPA ratings (scale 0 - 4)
Health = 3
Fire = 2
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 3
Fire = 2
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200):
Toxic
Highly Toxic
Primary route(s) of entry:
Inhalation
Oral
Target Organ(s):
May affect Nervous system (Neurotoxin)
Affects Pulmonary system (Lungs)
Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 2)

vPvB: *Not applicable.*

*

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description:
The product is made up of a mixture of hazardous and non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:		
3483-12-3	DL-Dithiothreitol	50-75%
7775-14-6	sodium hydrosulphite	1-5%

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

*

4 First-aid measures

Description of first aid measures
General information:
Immediately remove any clothing soiled by the product.
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:
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.*
After swallowing:
Immediately call a doctor.
Seek immediate medical advice.
Information for doctor:
Most important symptoms and effects, both acute and delayed
None
No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
None known
No further relevant information available.
Advice for firefighters *In the case of fire, wear respiratory protective equipment and chemical protective suit.*

*

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Wear protective equipment. Keep unprotected persons away.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 3)

Avoid formation of dust.
Wear protective clothing.
Environmental precautions: *Do not allow to enter sewers/ surface or ground water.*
Methods and material for containment and cleaning up:
Use neutralizing agent.
Dispose contaminated material as waste according to Section 13.
Pick up mechanically.
Ensure adequate ventilation.
Reference to other sections
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7 Handling and storage

Handling:
Precautions for safe handling *Thorough dedusting.*
Information about protection against explosions and fires: *Keep ignition sources away - Do not smoke.*

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *Do not store below -20°C. Protected from light.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *Keep receptacle tightly sealed.*
Specific end use(s) *No further relevant information available.*

*

8 Exposure controls/personal protection

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Additional information: *The lists that were valid during the creation were used as basis.*

Exposure controls
Personal protective equipment:
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.
Avoid contact with the eyes and skin.
Do not eat or drink while working.
Breathing equipment: *Not required.*
Protection of hands: *Not required.*
Material of gloves
Gloves impermeable to the specific chemical substance.
Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.
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.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 4)

Eye protection:
Tightly sealed goggles
Use equipment for eye protection tested and approved under government NIOSH standards.

*

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:

Form:	Solid
Color:	Colorless
Odor:	Odorless
Odor threshold:	Not determined.
pH-value:	Not applicable.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	130 °C (266 °F)
Flash point:	Not applicable.
Flammability (solid, gaseous):	Not determined.
Decomposition temperature:	Not determined.
Ignition temperature:	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 at 20 °C (68 °F):	1.027 g/cm³ (8.57032 lbs/gal)
Relative density	Not determined.
Vapor 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.
Solvent separation test	
Water:	2.0 %
VOC content:	0.00 %
Solids content:	98.0 %
Other information	No further relevant information available.

*

10 Stability and reactivity

Reactivity No further relevant information available.
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 5)

Possibility of hazardous reactions Reacts with acids, alkalis and oxidizing agents.
Conditions to avoid No further relevant information available.
Incompatible materials: No further relevant information available.
Hazardous decomposition products:
Sulfur oxides (SOx)
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)

* 11 Toxicological information

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: Causes skin irritation.
on the eye: Causes serious eye damage.
Sensitization:
In case of skin contact: not sensitising
In case of inhalation: not sensitising
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
OECD test guideline 471, Ames test.
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

Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
Persistence and degradability
Not available
No further relevant information available.
Bioaccumulative potential
Not known
No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Not available
Additional ecological information:
General notes: Must not reach bodies of water or drainage ditch undiluted or unneutralized.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 6)

Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*
Other adverse effects *No further relevant information available.*

*

13 Disposal considerations

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

Uncleaned packagings:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agent: *Water, if necessary with cleansing agents.*

*

14 Transport information

UN-Number	
DOT, ADR, IMDG, IATA	*UN3190*
UN proper shipping name	
DOT	*Self-heating solid, inorganic, n.o.s. (Sodium dithionite)*
ADR	*3190 SELF-HEATING SOLID, INORGANIC, N.O.S. (SODIUM DITHIONITE (SODIUM HYDROSULPHITE))*
IMDG, IATA	*SELF-HEATING SOLID, INORGANIC, N.O.S. (SODIUM DITHIONITE (SODIUM HYDROSULPHITE))*
Transport hazard class(es)	
DOT	

Class	*4.2 Substances liable to spontaneous combustion*
Label	*4.2*
ADR	

Class	*4.2 (S3) Substances liable to spontaneous combustion*
Label	*4.2*

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 7)

IMDG, IATA

Class	4.2 Substances liable to spontaneous combustion
Label	4.2
Packing group	
DOT, ADR, IMDG, IATA	II
Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Warning: Substances liable to spontaneous combustion
Hazard identification number (Kemler code):	30
EMS Number:	F-A,S-J
Stowage Category	E
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
IMDG	
Limited quantities (LQ)	0
Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
UN "Model Regulation":	UN 3190 SELF-HEATING SOLID, INORGANIC, N.O.S. (SODIUM DITHIONITE (SODIUM HYDROSULPHITE)), 4.2, II

*

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

3483-12-3	DL-Dithiothreitol
7775-14-6	sodium hydrosulphite

Hazardous Air Pollutants

None of the ingredients are listed.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 8)

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.

New Jersey Right-to-Know List:	
7775-14-6	sodium hydrosulphite

Pennsylvania Right-to-Know List:	
7775-14-6	sodium hydrosulphite

Cancerogenity categories

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

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

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

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Signal word Danger

Hazard-determining components of labeling:
DL-Dithiothreitol
sodium hydrosulphite
Hazard statements
Self-heating: may catch fire.
Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
Precautionary statements
Keep cool. Protect from sunlight.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Call a poison center/doctor if you feel unwell.
If on skin: Wash with plenty of water.
Immediately call a poison center/doctor.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
Take off contaminated clothing and wash it before reuse.
If skin irritation occurs: Get medical advice/attention.
Maintain air gap between stacks/pallets.
Store bulk masses greater than 0.01 lbs at temperatures not exceeding - 4°F.
Store away from other materials.
Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Assay Substrate

(Contd. of page 9)

Chemical safety assessment

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

*
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
Chemical Regulatory Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330
chemicalregulatory@promega.com
Contact:
Date of preparation / last revision 05/19/2023
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 relatif au transport international 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
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
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
Self-heating substances and mixtures 1: Self-heating substances and mixtures – Category 1
Acute Toxicity - Oral 4: Acute toxicity – Category 4
Skin Irritation 2: Skin corrosion/irritation – Category 2
Eye Damage 1: Serious eye damage/eye irritation – Category 1

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

* 1 Identification

Product identifier
Trade name: **Dual-Glo® Luciferase Buffer**
Article number: E298
Application of the substance / the mixture For Laboratory Use

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: chemicalregulatory@promega.com

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

Classification of the substance or mixture


GHS07

Eye Irritation 2A H319 Causes serious eye irritation.

Label elements
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms


GHS07

Signal word Warning
Hazard statements
Causes serious eye irritation.
Precautionary statements
Wash thoroughly after handling.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 1)

Classification system:
NFPA ratings (scale 0 - 4)
Health = 2
Fire = 0
Reactivity = 0
HMIS-ratings (scale 0 - 4)
*Health = *2*
Fire = 0
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200): *Irritant*
Primary route(s) of entry: *Dermal*
Target Organ(s): *Not applicable or unknown*
Other hazards
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*

*

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description:
The product is made up of a mixture of hazardous and non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:		
127087-87-0	Nonylphenol Ethoxylate	1-5%

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

*

4 First-aid measures

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. If symptoms persist, consult a doctor.
After swallowing: *If the patient feels unwell or is concerned, obtain medical advice.*
Information for doctor:
Most important symptoms and effects, both acute and delayed
None
No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
None known
No further relevant information available.

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 2)

Advice for firefighters No special advice

*

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Wear protective clothing.
Environmental precautions:
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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

Handling:
Precautions for safe handling No special precautions are necessary if used correctly.
Information about protection against explosions and fires: The product is not flammable.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: Do not store below -20°C. Protected from light.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep receptacle tightly sealed.
Specific end use(s) No further relevant information available.

*

8 Exposure controls/personal protection

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
Additional information: The lists that were valid during the creation were used as basis.

Exposure controls
Personal protective equipment:
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.
Avoid contact with the eyes and skin.
Do not eat or drink while working.
Breathing equipment: Not required.
Protection of hands: Not required.
Material of gloves
Gloves impermeable to the specific chemical substance.
Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to,

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 3)

chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.
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

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):	*7.4*
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.*
Decomposition temperature:	*Not determined.*
Ignition temperature:	*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.*
Solvent separation test	
Water:	*91.2 %*
VOC content:	*0.00 %*
Other information	*No further relevant information available.*

US

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 4)

*

10 Stability and reactivity

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

*

11 Toxicological information

Information on toxicological effects
Acute toxicity:
LD/LC50 values that are relevant for classification: No data available
Primary irritant effect:
on the skin: Causes skin irritation.
on the eye: Irritating effect.
Sensitization:
In case of skin contact: not sensitising
In case of inhalation: not sensitising
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
OECD test guideline 471, Ames test.
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

Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
Persistence and degradability
Not available
No further relevant information available.
Bioaccumulative potential
Not known
No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Not available
Additional ecological information:
General notes: No data available.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 5)

vPvB: *Not applicable.*
Other adverse effects *No further relevant information available.*

*

13 Disposal considerations

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

Uncleaned packagings:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agent: *Water, if necessary with cleansing agents.*

*

14 Transport information

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

*

15 Regulatory information

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

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

Section 313 (Specific toxic chemical listings):	
127087-87-0	*Nonylphenol Ethoxylate*

TSCA (Toxic Substances Control Act) Inventory:	
127087-87-0	*Nonylphenol Ethoxylate*

Hazardous Air Pollutants
None of the ingredients are listed.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 6)

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.

New Jersey Right-to-Know List:	
7775-14-6	sodium hydrosulphite

Pennsylvania Right-to-Know List:	
7775-14-6	sodium hydrosulphite

Cancerogenity categories

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

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

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

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Signal word Warning
Hazard statements
Causes serious eye irritation.
Precautionary statements
Wash thoroughly after handling.
Wear eye protection / face protection.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
Chemical safety assessment

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

*
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
Chemical Regulatory Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330
chemicalregulatory@promega.com
Contact:
Date of preparation / last revision 05/19/2023

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Luciferase Buffer

(Contd. of page 7)

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 relatif au transport international 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
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
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
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

* 1 Identification

Product identifier
Trade name: **Dual-Glo® Stop and Glo® Substrate**
Article number: E313
Application of the substance / the mixture For Laboratory Use

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: chemicalregulatory@promega.com

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

Classification of the substance or mixture

GHS02 Flame

Flammable Liquids 2 H225 Highly flammable liquid and vapor.

GHS07

Eye Irritation 2A H319 Causes serious eye irritation.

Label elements
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS02 GHS07

Signal word Danger
Hazard statements
Highly flammable liquid and vapor.
Causes serious eye irritation.
Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 1)

Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use CO2, powder or water spray to extinguish.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Classification system:
NFPA ratings (scale 0 - 4)
Health = 2
Fire = 3
Reactivity = 0
HMIS-ratings (scale 0 - 4)
Health = 2
Fire = 3
Reactivity = 0
OSHA Hazard Overview (Criteria according to 29CFR1910.1200):
Irritant
Flammable
Primary route(s) of entry:
Dermal
Inhalation
Target Organ(s):
May cause Liver damage (Hepatotoxin)
May affect Nervous system (Neurotoxin)
Other hazards
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*

*

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description:
The product is made up of a mixture of hazardous and non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:		
64-17-5	ethanol	75-100%
56-81-5	glycerol	10-15%

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 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 2)

*

4 First-aid measures

Description of first aid measures
General information: Immediately remove any clothing soiled by the product.
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. If symptoms persist, consult a doctor.
After swallowing: If the patient feels unwell or is concerned, obtain medical advice.
Information for doctor:
Most important symptoms and effects, both acute and delayed
Headache
Dizziness
Nausea
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents: Use fire fighting measures that suit the environment.
Special hazards arising from the substance or mixture
None known
No further relevant information available.
Advice for firefighters In the case of fire, wear respiratory protective equipment and chemical protective suit.

*

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Remove persons from danger area.
Wear protective equipment. Keep unprotected persons away.
Keep away from ignition sources
Wear protective clothing.
Environmental precautions:
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
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.
Reference to other sections
See Section 7 for information on safe handling.
See Section 13 for disposal information.

*

7 Handling and storage

Handling:
Precautions for safe handling Use only in well ventilated areas.
Information about protection against explosions and fires:
Keep ignition sources away - Do not smoke.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 3)

Protect against electrostatic charges.

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

*
8 Exposure controls/personal protection

Control parameters

Components with limit values that require monitoring at the workplace:	
64-17-5 ethanol	
PEL	Long-term value: 1900 mg/m³, 1000 ppm
REL	Long-term value: 1900 mg/m³, 1000 ppm
TLV	Short-term value: 1000 ppm A3
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.

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.
Avoid contact with the eyes and skin.
Do not eat or drink while working.
Breathing equipment: Not required.
Protection of hands: Not required.
Material of gloves
Gloves impermeable to the specific chemical substance.
Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.
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

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 4)

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

*

9 Physical and chemical properties

Information on basic physical and chemical properties
General Information
Appearance:

Form:	Fluid
Color:	Colorless
Odor:	Alcohol-like
Odor threshold:	Not determined.

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	78 °C (172.4 °F)
Flash point:	17 °C (62.6 °F)

Flammability (solid, gaseous):	Highly flammable.
Auto igniting:	400 °C (752 °F)
Decomposition temperature:	Not determined.
Ignition temperature:	Product is not selfigniting.
Danger of explosion:	Product does not present an explosion hazard. Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	3.5 Vol %
Upper:	15 Vol %
Vapor pressure at 20 °C (68 °F):	59 hPa (44.3 mm Hg)
Vapor pressure at 50 °C (122 °F):	280 hPa (210 mm Hg)
Density at 20 °C (68 °F):	0.84771 g/cm³ (7.07414 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.
Solvent separation test	
Organic solvents:	99.8 %
VOC content:	86.82 %
Other information	No further relevant information available.

*

10 Stability and reactivity

Reactivity No further relevant information available.
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 5)

Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No further relevant information available.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No dangerous decomposition products known.

*

11 Toxicological information

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
64-17-5 ethanol		
Oral	LD50	7,060 mg/kg (Rat)
Inhalative	LC50/4 h	20,000 mg/l (Rat)

Primary irritant effect:
on the skin: Causes skin irritation.
on the eye: Irritating effect.
Sensitization:
In case of skin contact: not sensitising
In case of inhalation: not sensitising
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
OECD test guideline 471, Ames test.
Irritant

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
64-17-5	ethanol	1
7664-93-9	sulphuric acid	1

NTP (National Toxicology Program)		
7664-93-9	sulphuric acid	K

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

*

12 Ecological information

Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
Persistence and degradability
Not available
No further relevant information available.
Bioaccumulative potential
Not known
No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Not available
Additional ecological information:
General notes: No data available.
Results of PBT and vPvB assessment
PBT: Not applicable.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 6)

vPvB: *Not applicable.*
Other adverse effects *No further relevant information available.*

*

13 Disposal considerations

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

Uncleaned packagings:
Recommendation: *Disposal must be made according to official regulations.*
Recommended cleansing agent: *Water, if necessary with cleansing agents.*

*

14 Transport information

UN-Number	
DOT, ADR, IMDG, IATA	*UN1170*
UN proper shipping name	
DOT	*Ethanol solutions*
ADR	*1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)*
IMDG	*ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)*
IATA	*ETHANOL SOLUTION*
Transport hazard class(es)	
DOT	

Class	*3 Flammable liquids*
Label	*3*
ADR	

Class	*3 (F1) Flammable liquids*
Label	*3*
IMDG, IATA	

Class	*3 Flammable liquids*
Label	*3*

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 7)

Packing group **DOT, ADR, IMDG, IATA**	II
Environmental hazards: **Marine pollutant:**	No
Special precautions for user **Hazard identification number (Kemler code):** **EMS Number:** **Stowage Category**	Warning: Flammable liquids 33 F-E,S-D A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
ADR **Excepted quantities (EQ)**	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
IMDG **Limited quantities (LQ)** **Excepted quantities (EQ)**	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION), 3, II

*

15 Regulatory information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act) Inventory:

64-17-5	ethanol
56-81-5	glycerol

Hazardous Air Pollutants

None of the ingredients are listed.

Proposition 65

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 8)

Chemicals known to cause developmental toxicity:

64-17-5	ethanol

New Jersey Right-to-Know List:

All ingredients are listed.

Pennsylvania Right-to-Know List:

All ingredients are listed.

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value)

64-17-5	ethanol	A3
7664-93-9	sulphuric acid	A2

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

None of the ingredients are listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Signal word Danger
Hazard statements
Highly flammable liquid and vapor.
Causes serious eye irritation.
Precautionary statements
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire: Use CO_2, powder or water spray to extinguish.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Chemical safety assessment

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

*

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
Chemical Regulatory Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330
chemicalregulatory@promega.com

(Contd. on page 10)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop and Glo® Substrate

(Contd. of page 9)

Contact:

Date of preparation / last revision 05/19/2023

Abbreviations and acronyms:

ADR: Accord relatif au transport international 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
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
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
Flammable Liquids 2: Flammable liquids – Category 2
Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

* 1 Identification

Product identifier
Trade name: **Dual-Glo® Stop & Glo® Buffer**
Article number: E314
Application of the substance / the mixture For Laboratory Use

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: chemicalregulatory@promega.com

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

Classification of the substance or mixture

GHS08 Health hazard

Carcinogenicity 2	H351 Suspected of causing cancer.
Toxic to Reproduction 2	H361 Suspected of damaging fertility or the unborn child.
Specific Target Organ Toxicity - Single Exposure 1	H370 Causes damage to the central nervous system and the visual organs.

Label elements
GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Hazard pictograms

GHS08

Signal word Danger

Hazard-determining components of labeling:
thiourea
methanol
Hazard statements
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 1)

Causes damage to the central nervous system and the visual organs.
Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
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):
Reproductive Hazard
Suspected Carcinogen
Target Organ(s): *Not applicable or unknown*
Other hazards
Results of PBT and vPvB assessment
PBT: *Not applicable.*
vPvB: *Not applicable.*

*

3 Composition/information on ingredients

Chemical characterization: Mixtures
Description:
The product is made up of a mixture of hazardous and non-hazardous components. The exact concentration percentages and components name may be withheld as a Promega Corp. trade secret.

Dangerous components:		
125572-95-4	trans-1,2-Diaminocyclohexane-N,N,N′,N′-tetraacetic acid monohydrate	1-5%
67-56-1	methanol	1-5%
62-56-6	thiourea	<1%

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

*

4 First-aid measures

Description of first aid measures
General information: *Take affected persons out into the fresh air.*
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 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 2)

Information for doctor:
Most important symptoms and effects, both acute and delayed
None
No further relevant information available.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

*

5 Fire-fighting measures

Extinguishing media
Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards arising from the substance or mixture
None known
No further relevant information available.
Advice for firefighters *No special advice*
Protective equipment: *Mouth respiratory protective device.*

*

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Mount respiratory protective device.
Remove persons from danger area.
Wear protective clothing.
Environmental precautions: *Dilute with plenty of water.*
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.
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

Handling:
Precautions for safe handling
Keep receptacles tightly sealed.
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
Information about protection against explosions and fires:
Keep respiratory protective device available.
The product is not flammable.

Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: *Do not store below -20°C. Protected from light.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *Keep receptacle tightly sealed.*

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 3)

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

*

8 Exposure controls/personal protection

Control parameters
Components with limit values that require monitoring at the workplace:
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 250 ppm Long-term value: 200 ppm Skin; BEI

Ingredients with biological limit values:	
67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

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

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.
Pregnant women should strictly avoid inhalation or skin contact.
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: Not required.
Material of gloves
Gloves impermeable to the specific chemical substance.
Please observe the instructions regarding permeability and breakthrough time which are provided by the manufacturer/supplier of the gloves. Ensure gloves are suitable for the task which includes, but is not limited to, chemical compatibility, dexterity, operational conditions, user susceptibility, e.g., sensitization effects. Consider specific local conditions under which the product is used such as the danger of cuts and abrasion. Remove gloves with care to avoid skin contamination.
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

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 4)

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

*

9 Physical and chemical properties

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):	5.5
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.
Decomposition temperature:	Not determined.
Ignition temperature:	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):	1.0186 g/cm³ (8.50022 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.
Solvent separation test	
Organic solvents:	2.0 %
Water:	92.6 %
VOC content:	2.00 %
Solids content:	5.2 %
Other information	No further relevant information available.

*

10 Stability and reactivity

Reactivity No further relevant information available.
Chemical stability
Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 5)

Possibility of hazardous reactions No dangerous reactions known.
Conditions to avoid No further relevant information available.
Incompatible materials: No further relevant information available.
Hazardous decomposition products: No dangerous decomposition products known.

*

11 Toxicological information

Information on toxicological effects
Acute toxicity:

LD/LC50 values that are relevant for classification:		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (Rat)

Primary irritant effect:
on the skin: Causes skin irritation.
on the eye: No data available.
Sensitization:
In case of skin contact: not sensitising
In case of inhalation: not sensitising
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
OECD test guideline 471, Ames test.

Carcinogenic categories

IARC (International Agency for Research on Cancer)		
62-56-6	thiourea	3

NTP (National Toxicology Program)		
62-56-6	thiourea	R

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

*

12 Ecological information

Toxicity
Aquatic toxicity: Not harmful to the aquatic environment
Persistence and degradability
Not available
No further relevant information available.
Bioaccumulative potential
Not known
No further relevant information available.
Mobility in soil No further relevant information available.
Ecotoxicological effects:
Remark: Not available
Additional ecological information:
General notes: Not available.
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 6)

Other adverse effects No further relevant information available.

* 13 Disposal considerations

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

Uncleaned packagings:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agent: Water, if necessary with cleansing agents.

* 14 Transport information

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

* 15 Regulatory information

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

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

Section 313 (Specific toxic chemical listings):	
67-56-1	methanol
62-56-6	thiourea
127087-87-0	Nonylphenol Ethoxylate

TSCA (Toxic Substances Control Act) Inventory:	
67-56-1	methanol

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 7)

62-56-6	thiourea

Hazardous Air Pollutants

67-56-1	methanol

Proposition 65

Chemicals known to cause cancer:

62-56-6	thiourea

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:

67-56-1	methanol

New Jersey Right-to-Know List:

67-56-1	methanol
62-56-6	thiourea

Pennsylvania Right-to-Know List:

62-56-6	thiourea

Cancerogenity categories

EPA (Environmental Protection Agency)

None of the ingredients are listed.

TLV (Threshold Limit Value)

None of the ingredients are listed.

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

None of the ingredients are listed.

GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
Signal word Danger

Hazard-determining components of labeling:
thiourea
methanol
Hazard statements
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to the central nervous system and the visual organs.
Precautionary statements
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/protective clothing/eye protection/face protection.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
Chemical safety assessment
Additional classification according to Decree on Hazardous Materials: Can cause cancer.

Water hazard class: Generally not hazardous for water.

(Contd. on page 9)

Safety Data Sheet
acc. to OSHA HCS

Printing date 05/19/2023 Reviewed on 05/19/2023

Trade name: Dual-Glo® Stop & Glo® Buffer

(Contd. of page 8)

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
Chemical Regulatory Department
2800 Woods Hollow Road
Madison, WI
Ph:(608)274-4330
chemicalregulatory@promega.com
Contact:
Date of preparation / last revision *05/19/2023*
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 relatif au transport international 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
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
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
BEI: Biological Exposure Limit
Carcinogenicity 2: Carcinogenicity – Category 2
Toxic to Reproduction 2: Reproductive toxicity – Category 2
Specific Target Organ Toxicity - Single Exposure 1: Specific target organ toxicity (single exposure) – Category 1