Safety Data Sheet (SDS) According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

Issuing Date: 2017-09-26 **Revision Date:** 2020-05-02 **Version:** 2

SECTION 1. Identification

Product identifier

Product No	9005
Product name	SimpleChIP® Plus Enzymatic Chromatin IP Kit (Magnetic Beads)
Kit Component	7005: Glycine Solution (10X) 7006: Buffer A (4X) 7007: Buffer B (4X) 7008: ChIP Buffer (10X) 7009: ChIP Elution Buffer (2X) 7010: 5 M NaCl 7011: 0.5 M EDTA, pH 8.0 9006: ChIP-Grade Protein G Magnetic Beads 10007: DNA Binding Buffer 10008: DNA Wash Buffer 10009: DNA Elution Buffer 10010: DNA Purification Columns and Collection Tubes 7012: Protease Inhibitor Cocktail (200X) 7013: RNAse A (10 mg/ml) 10011: Micrococcal Nuclease 10012: Proteinase K 7014: SimpleChIP® Human RPL30 Exon 3 Primers 7015: SimpleChIP® Mouse RPL30 Intron 2 Primers 4620: Histone H3 (D2B12) XP® Rabbit mAb (ChIP Formulated) 2729: Normal Rabbit IgG 7016: DTT (Dithiothreitol)
UN number	UN3316

Recommended use of the chemical and restrictions on use

Identified uses	This product is intended for research purposes only.

Manufacturer, importer, supplier

Manufacturer address	Cell Signaling Technology, Inc. 3 Trask Lane Danvers, MA 01923 United States TEL: +1 978 867 2300 FAX: +1 978 867 2400
Website	www.cellsignal.com
Email address	support@cellsignal.com
Emergency telephone number	In case of emergency call CHEMTREC 1-800-424-9300

SECTION 2. Hazard(s) identification

Classification

This substance/mixture is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Classification and label elements described below are inclusive of all hazards of the combined kit. The most severe classifications are listed for each endpoint. Refer to individual kit component SDS for classification and label elements for each component present in the kit.

Acute oral toxicity	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Respiratory sensitization	Category 1
Specific target organ toxicity - single exposure (STOT SE)	Category 3
Flammable liquids	Category 2

GHS Label elements, including precautionary statements

Signal Word
Danger.

Hazard statement(s)
Highly flammable liquid and vapor.
Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause drowsiness or dizziness. May cause respiratory irritation.

Precautionary Statement(s)
Wash face, hands and any exposed skin thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. 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. Keep cool.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
In case of fire: Use CO_2, dry chemical, or foam for extinction.
Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Dispose of contents/container to an approved waste disposal plant.

Supplementary Hazard Information

Hazards not otherwise classified (HNOC)
May accelerate skin absorption of other materials. Special attention needed when toxic materials are present in dimethyl sulfoxide because of enhanced skin absorption.

SECTION 3. Composition/information on ingredients

Kit Component 7005: Glycine Solution (10X)

Chemical name	CAS No	Weight-%
glycine	56-40-6	5-10
sodium azide	26628-22-8	<0.1

Kit Component 7006: Buffer A (4X)

Chemical name	CAS No	Weight-%
sucrose	57-50-1	30-60
2-[2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethoxy] ethanol	9036-19-5	1-5
potassium chloride	7447-40-7	1-5
sodium azide	26628-22-8	<0.1

Kit Component 7007: Buffer B (4X)

Chemical name	CAS No	Weight-%
sucrose	57-50-1	30-60
potassium chloride	7447-40-7	1-5
sodium azide	26628-22-8	<0.1

Kit Component 7008: ChIP Buffer (10X)

Chemical name	CAS No	Weight-%
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	9002-93-1	5-10
trometamol	77-86-1	3-7
glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt, hydrate (1:2:2)	6381-92-6	1-5
sodium 3-alpha,12-alphadihydroxy-5beta-cholan-24-oate	302-95-4	0.1-1
sodium dodecyl sulphate	151-21-3	0.1-1

Kit Component 7009: ChIP Elution Buffer (2X)

Chemical name	CAS No	Weight-%
sodium dodecyl sulphate	151-21-3	1-<3
trometamol	77-86-1	0.5-1.5

Kit Component 7011: 0.5 M EDTA, pH 8.0

Chemical name	CAS No	Weight-%
glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt, hydrate (1:2:2)	6381-92-6	10-30
sodium hydroxide	1310-73-2	<1

Kit Component 9006: ChIP - Grade Protein G Magnetic Beads

Chemical name	CAS No	Weight-%
sodium azide	26628-22-8	<=0.1

Kit Component Name 10007: DNA Binding Buffer

Chemical name	CAS No	Weight-%
propan-2-ol	67-63-0	30-60
guanidinium chloride	50-01-1	30-60

Kit Component 7012: Protease Inhibitor Cocktail (200X)

Chemical name	CAS No	Weight-%
dimethyl sulfoxide	67-68-5	60-<100
benzenesulfonyl fluoride, 4-(2-aminoethyl)-, hydrochloride (1:1)	30827-99-7	1-<3

Kit Component 7013: RNAse A (10 mg/ml)

Chemical name	CAS No	Weight-%
glycerol	56-81-5	30-60
trometamol	77-86-1	7-<10

Kit Component Name 10011: Micrococcal Nuclease

Chemical name	CAS No	Weight-%
glycerol	56-81-5	30-60
edetic acid	60-00-4	0.1-1

Kit Component Name 10012: Proteinase K

Chemical name	CAS No	Weight-%
glycerol	56-81-5	30-60
Proteinase, Tritirachium album serine	39450-01-6	1-<3

Kit Component Name 4620: Histone H3 (D2B12) XP® Rabbit mAb (ChIP Formulated)

Chemical name	CAS No	Weight-%
glycerol	56-81-5	30-60
sodium azide	26628-22-8	<0.02

Kit Component 2729: Normal Rabbit IgG

Chemical name	CAS No	Weight-%
glycerol	56-81-5	30-60

Kit Component Name 7016: DTT (Dithiothreitol)

Chemical name	CAS No	Weight-%
(R*,R*)-1,4-dimercaptobutane-2,3-diol	3483-12-3	60-100

Kit Component Name
7010: 5M NaCl
10008: DNA Wash Buffer
10009: DNA Elution Buffer
7014: SimpleChIP® Human RPL30 Exon 3 Primers
7015: SimpleChIP® Mouse RPL30 Intron 2 Primers
100010: DNA Purification Columns and Collection Tubes

These products do not contain substances at concentrations requiring disclosure under 29 CFR 1910.1200 (OSHA Hazard Communication Standard).

SECTION 4. First-aid measures

Eye contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention immediately if symptoms occur.

Skin contact Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention immediately if symptoms occur. If breathing is difficult, give oxygen.

Ingestion Do NOT induce vomiting. Clean mouth with water and afterwards drink plenty of water. Get medical attention immediately if symptoms occur.

Most important symptoms and effects, both acute and delayed

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms. Corrosive to the eyes and may cause irreversible eye damage. Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Advice for emergency responders

General advice	Use first aid treatment according to the nature of the injury. When symptoms persist or in all cases of doubt seek medical advice. Show this safety data sheet to the doctor in attendance.
Protection of first-aiders	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	CAUTION: Use of water spray when fighting fire may be inefficient. Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Explosion Data

Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation.
Other information	No information available.

Environmental precautions

See Section 12 for additional information.

Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Cover liquid spill with sand, earth or other noncombustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. Prevent product from entering drains.

SECTION 7. Handling and storage

Precautions for safe handling

Use according to package label instructions. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities

Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.
Packaging material	No information available.
Incompatible products	Strong acids, Strong bases, Oxidizing agents.

SECTION 8. Exposure controls/personal protection

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH REL
glycerol	-	TWA mist, total particulate: 15 mg/m^3 TWA mist, respirable fraction: 5 mg/m^3	-
sucrose	TWA : 10 mg/m^3	TWA total dust: 15 mg/m^3 TWA respirable fraction: 5 mg/m^3	TWA total dust: 10 mg/m^3 TWA respirable dust: 5 mg/m^3
propan-2-ol	STEL 400 ppm TWA : 200 ppm	TWA : 400 ppm TWA : 980 mg/m^3	IDLH : 2000 ppm TWA : 400 ppm TWA : 980 mg/m^3 STEL: 500 ppm STEL: 1225 mg/m^3
sodium hydroxide	Ceiling: 2 mg/m^3	TWA : 2 mg/m^3	IDLH : 10 mg/m^3 Ceiling: 2 mg/m^3
sodium azide	Ceiling: 0.29 mg/m^3 Ceiling: 0.11 ppm	-	Ceiling: 0.1 ppm Ceiling: 0.3 mg/m^3

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

Eye/face protection	Tightly fitting safety goggles. If splashes are likely to occur, wear. Face-shield.
Skin and body protection	Wear protective gloves/clothing.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties

Information on the known physical chemical properties of each component within Kit are given below. If not included, information is either not available or not applicable. Refer to individual kit component SDS for further information.

Information on basic physical and chemical properties

Kit Component	**7005: Glycine Solution (10X)**
Physical state	Liquid
Appearance	Transparent
Color	Clear Colorless
pH VALUE	6.58
Remarks	@ 20 °C

Kit Component	**7006: Buffer A (4X)**
Physical state	Liquid
Appearance	Translucent
Color	Clear
pH VALUE	7.5
Remarks	@ 20 °C

Kit Component	**7007: Buffer B (4X)**
Physical state	Liquid
Appearance	Translucent
Color	Clear Colorless
pH VALUE	7.5
Remarks	@ 20 °C

Kit Component	**7008: ChIP Buffer (10X)**
Physical state	Liquid
Appearance	Translucent
Color	Clear
pH VALUE	8.1
Remarks	@ 20 °C

Kit Component	**7009: ChIP Elution Buffer (2X)**
Physical state	Liquid
Appearance	Translucent
Color	Clear
pH VALUE	7.5
Remarks	@ 20 °C

Kit Component	**7010: 5M NaCl**
Physical state	Liquid
Appearance	Translucent
Color	Clear Colorless
pH VALUE	5.35
Remarks	@ 20 °C

Kit Component	**7011: 0.5 M EDTA, pH 8.0**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	8
Remarks	@ 20 °C

Kit Component	**9006: ChIP-Grade Protein G Magnetic Beads**
Physical state	Liquid
Appearance	Suspension
Color	Clear White to off-white with white suspended solids

Kit Component	**10007: DNA Binding Buffer**
Physical state	Liquid
Appearance	Colorless
Color	Clear
Odor	Characteristic
pH VALUE	7.0
Remarks	@ 20 °C
Flash point (°C) VALUE	>=21
Autoignition temp (°C) VALUE	425
Upper flammability limit	12%
Lower flammability limit	2%

Kit Component	**10008: DNA Wash Buffer**
Physical state	Liquid
pH VALUE	7.7

Remarks	@ 20 °C
Kit Component	**10009: DNA Elution Buffer**
Physical state	Liquid
pH VALUE	8.5
Remarks	@ 20 °C
Kit Component	**10010: DNA Purification Columns and Collection Tubes**
Physical state	Solid (1 X 36 Pack)
Kit Component	**7012: Protease Inhibitor Cocktail (200X)**
Physical state	Liquid
Appearance	Clear
Color	Colorless
Odor	Sulphurous
pH VALUE	7
Remarks	@ 20 °C
Flash point (°C) VALUE	87°C
Method	Closed cup (based on components)
Upper flammability limit	42%
Lower flammability limit	3.5%
Kit Component	**7013: RNAse A (10 mg/ml)**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	7.6
Remarks	@ 20 °C
Kit Component	**10011: Micrococcal Nuclease**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	7.5
Remarks	@ 25 °C
Kit Component	**10012: Proteinase K (20 mg/ml)**
Physical state	Liquid
Appearance	Clear
Color	Colorless
Kit Component	**7014: SimpleChIP® Human RPL30 Exon 3 Primers**
Physical state	Liquid
Appearance	Clear
Color	Colorless
Kit Component	**7015: SimpleChIP® Mouse RPL30 Intron 2 Primers**
Physical state	Liquid
Appearance	Clear
Color	Colorless
Kit Component	**4620: Histone H3 (D2B12) XP® Rabbit mAb (ChIP Formulated)**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	7.5
Remarks	@ 20 °C
Kit Component	**2729: Normal Rabbit IgG**
Physical state	Liquid
Appearance	Clear
Color	Colorless
pH VALUE	7.5

Remarks	@ 20 °C
Kit Component	**7016: DTT (Dithiothreitol)**
Physical state	Solid
Appearance	Powder
Color	White

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

Extremes of temperature and direct sunlight. Heat, flames and sparks. Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the HIGHLY EXPLOSIVE compounds of lead azide & copper azide.

Incompatible Materials

Strong acids. Strong bases. Oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

SECTION 11. Toxicological information

Information on likely routes of exposure

Product Information
Refer to kit component SDS for full toxicological information. This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Inhalation

Kit Component	**10007: DNA Binding Buffer**
Inhalation	May cause drowsiness and dizziness
Kit Component	**10012: Proteinase K**
Inhalation	May cause allergy or asthma symptoms or breathing difficulties if inhaled
Kit Component	**7016: DTT (Dithiothreitol)**
Inhalation	May cause irritation of respiratory tract

Eye contact

Kit Component	**7006: Buffer A (4X)**

Eye contact	May cause irreversible damage to eyes
Kit Component	**7008: ChIP Buffer (10X)**
Eye contact	May cause irreversible damage to eyes
Kit Component	**7009: ChIP Elution Buffer (2X)**
Eye contact	Expected to be an irritant based on components
Kit Component	**7010: 5M NaCl**
Eye contact	Contact with eyes may cause irritation
Kit Component	**7011: 0.5 M EDTA, pH 8.0**
Eye contact	Expected to be an irritant based on components
Kit Component	**10007: DNA Binding Buffer**
Eye contact	Expected to be an irritant based on components
Kit Component	**7012: Protease Inhibitor Cocktail (200X)**
Eye contact	Expected to be an irritant based on components
Kit Component	**7016: DTT (Dithiothreitol)**
Eye contact	Severely irritating to eyes

Skin contact

Kit Component	**7008: ChIP Buffer (10X)**
Skin contact	Expected to be an irritant based on components
Kit Component	**7011: 0.5 M EDTA, pH 8.0**
Skin contact	Expected to be an irritant based on components
Kit Component	**10007: DNA Binding Buffer**
Skin contact	Expected to be an irritant based on components
Kit Component	**7012: Protease Inhibitor Cocktail (200X)**
Skin contact	Expected to be an irritant based on components
Kit Component	**7016: DTT (Dithiothreitol)**
Skin contact	Irritating to skin

Ingestion

Kit Component	**10007: DNA Binding Buffer**
Ingestion	May be harmful if swallowed
Kit Component	**7016: DTT (Dithiothreitol)**
Ingestion	Harmful if swallowed

Information on toxicological effects

Kit Component	**7010: 5M NaCl**
ATEmix (oral)	10,267 mg/kg
Kit Component	**10007: DNA Binding Buffer**
ATEmix (oral)	867 mg/kg
ATEmix (dermal)	25600 mg/kg

Component Information

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation
glycerol	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 570 mg/m³ (Rat) 1 h
(R*,R*)-1,4-dimercaptobutane-2,3-diol	400 mg/kg (Rat)	-	-
dimethyl sulfoxide	= 14500 mg/kg (Rat) = 28300 mg/kg (Rat)	= 40 g/kg (Rat)	> 5.33 mg/L (Rat) 4 h
sucrose	29700 mg/kg (Rat)	-	-
propan-2-ol	5000 mg/kg (Rat)	12800 mg/kg (Rabbit)	16000 ppm (Rat) 8h
guanidinium chloride	475 mg/kg (Rat)	-	-
sodium chloride	3000 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	> 42000 mg/m³ (Rat) 1 h
glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt, hydrate (1:2:2)	2800 mg/kg (Rat)	-	-
trometamol	5900 mg/kg (Rat)	-	-
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	= 1800 mg/kg (Rat)	-	-
glycine	9550 mg/kg (Rat)	-	-
2-[2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethoxy]ethanol	1700 mg/kg (Rat)	-	-
potassium chloride	2600 mg/kg (Rat)	-	-
sodium dodecyl sulphate	= 1288 mg/kg (Rat)	= 200 mg/kg (Rabbit)	> 3900 mg/m³ (Rat) 1 h
benzenesulfonyl fluoride, 4-(2-aminoethyl)-, hydrochloride (1:1)	2834 mg/kg (mouse)	-	-
sodium 3-alpha,12-alphadihydroxy-5beta-cholan-24-oate	1370 mg/kg (Rat)	-	-
sodium azide	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms

Contains kit components which may cause the following effects, refer to individual component SDSs for full information on symptoms, Corrosive to the eyes and may cause irreversible eye damage. Liquid, aerosols and vapors of this product are irritating and can cause pain, tearing, reddening and swelling accompanied by a stinging sensation and/or a feeling like that of fine dust in the eyes. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Skin and Eye Corrosion/Irritation

Kit Component **7006: Buffer A (4X)**
Serious eye damage/eye irritation Risk of serious damage to eyes

Kit Component **7008: ChIP Buffer (10X)**
Serious eye damage/eye irritation Risk of serious damage to eyes
Skin corrosion/irritation Causes skin irritation

Kit Component **7009: ChIP Elution Buffer (2X)**
Serious eye damage/eye irritation Causes serious eye irritation

Kit Component **7010: 5M NaCl**
Serious eye damage/eye irritation Irritating to eyes

Kit Component **7011: 0.5 M EDTA, pH 8.0**
Serious eye damage/eye irritation Causes serious eye irritation
Skin corrosion/irritation Causes skin irritation

Kit Component **10007: DNA Binding Buffer**
Serious eye damage/eye irritation Causes serious eye irritation
Skin corrosion/irritation Causes skin irritation

Kit Component **7012: Protease Inhibitor Cocktail (200X)**
Serious eye damage/eye irritation Causes serious eye irritation
Skin corrosion/irritation Causes skin irritation

Kit Component **7016: DTT (Dithiothreitol)**
Serious eye damage/eye irritation Causes serious eye irritation
Skin corrosion/irritation Causes skin irritation

Sensitization

Kit Component **10012: Proteinase K**
Respiratory Sensitization Respiratory Sensitizer May cause allergy or asthma symptoms or breathing difficulties if inhaled

Mutagenic effects No information available

Carcinogenicity No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.

Chemical name	IARC	NTP	OSHA
propan-2-ol 67-63-0	3	-	-

Reproductive toxicity No information available.

Systemic Target Organ Toxicity (STOT)

Kit Component **10007: DNA Binding Buffer**
Target Organ Effects Central nervous system (CNS)
STOT - single exposure May cause drowsiness or dizziness

Kit Component **7012: Protease Inhibitor Cocktail (200X)**
Other adverse effects May accelerate skin absorption of other materials. Special attention needed when toxic materials are present in dimethyl sulfoxide because of enhanced skin absorption.

Kit Component **7016: DTT (Dithiothreitol)**
STOT - single exposure Respiratory system

Aspiration Hazard No information available.

SECTION 12. Ecological information

Ecotoxicity

Product Information

Component Information

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
glycerol	-	LC50 51 - 57 mL/L (Oncorhynchus mykiss) 96 h	EC50 500 mg/L (Daphnia magna) 24 h
dimethyl sulfoxide	EC50 12350 - 25500 mg/L (Skeletonema costatum) 96 h	LC50 34000 mg/L (Pimephales promelas) 96 h LC50 41.7 g/L (Cyprinus carpio) 96 h LC50 40 g/L (Lepomis macrochirus) 96 h LC50 33 - 37 g/L (Oncorhynchus mykiss) 96 h	EC50 7000 mg/L (Daphnia species) 24 h
propan-2-ol	EC50 1000 mg/L (Desmodesmus subspicatus) 96 h EC50 1000 mg/L (Desmodesmus subspicatus) 72 h	LC50 9640 mg/L (Pimephales promelas) 96 h LC50 1400000 µg/L (Lepomis macrochirus) 96 h LC50 11130 mg/L (Pimephales promelas) 96 h	EC50 13299 mg/L (Daphnia magna) 48 h
guanidinium chloride	-	LC50 1758 mg/L (Leuciscus idus) 48 h	-
sodium chloride	-	LC50 5560 - 6080 mg/L (Lepomis macrochirus) 96 h LC50 12946 mg/L (Lepomis macrochirus) 96 h LC50 4747 - 7824 mg/L (Oncorhynchus mykiss) 96 h LC50 7050 mg/L (Pimephales promelas) 96 h LC50 6420 - 6700 mg/L (Pimephales promelas) 96 h LC50 6020 - 7070 mg/L (Pimephales promelas) 96 h	EC50 340.7 - 469.2 mg/L (Daphnia magna) 48 h EC50 1000 mg/L (Daphnia magna) 48 h
trometamol	-	-	NOEC >100 mg/L (Selenastrum capricornutum) 96 h
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	-	LC50 8.9 mg/l (Pimephales promelas) 96 h	EC50 26 mg/l (Daphnia) 48 h
2-[2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethoxy]ethanol	EC50 0.21 mg/L (Selenastrum) 96 h	LC50 7.2 mg/L (Oncorhynchus mykiss) 96 h	LC50 8.6 mg/L (Daphnia magna) 48 h
potassium chloride	EC50 2500 mg/L (Desmodesmus subspicatus) 72 h	LC50 1060 mg/L (Lepomis macrochirus) 96 h LC50 750 - 1020 mg/L (Pimephales promelas) 96 h	EC50 825 mg/L (Daphnia magna) 48 h EC50 83 mg/L (Daphnia magna) 48 h
sodium dodecyl sulphate	EC50 53 mg/L (Desmodesmus subspicatus) 72 h EC50 30 - 100 mg/L (Desmodesmus subspicatus) 96 h EC50 42 mg/L (Desmodesmus subspicatus) 96 h EC50 3.59 - 15.6 mg/L (Pseudokirchneriella subcapitata) 96 h EC50 117 mg/L (Pseudokirchneriella subcapitata) 96 h	LC50 8 - 12.5 mg/L (Pimephales promelas) 96 h LC50 4.1 mg/L (Leuciscus idus) 48 h LC50 22.1 - 22.8 mg/L (Pimephales promelas) 96 h LC50 4.3 - 8.5 mg/L (Oncorhynchus mykiss) 96 h LC50 4.62 mg/L (Oncorhynchus mykiss) 96 h LC50 4.2 mg/L (Oncorhynchus mykiss) 96 h LC50 7.97 mg/L (Brachydanio rerio) 96 h LC50 9.9 - 20.1 mg/L (Brachydanio rerio) 96 h LC50 4.06 - 5.75 mg/L (Lepomis macrochirus) 96 h LC50 4.2 - 4.8 mg/L (Lepomis macrochirus) 96 h LC50 4.5 mg/L (Lepomis macrochirus) 96 h LC50 5.8 - 7.5 mg/L (Pimephales promelas) 96 h LC50 10.2 - 22.5 mg/L (Pimephales promelas) 96 h LC50 6.2 - 9.6 mg/L (Pimephales promelas) 96 h LC50 13.5 - 18.3 mg/L (Poecilia reticulata) 96 h LC50 10.8 - 16.6 mg/L (Poecilia reticulata) 96 h LC50 1.31 mg/L (Cyprinus carpio) 96 h LC50 15 - 18.9 mg/L (Pimephales promelas) 96 h	EC50 21.2 mg/L (Daphnia magna) 24 h EC50 1.8 mg/L (Daphnia magna) 48 h
sodium hydroxide	-	LC50 45.4 mg/L (Oncorhynchus mykiss) 96 h	-
sodium azide	EC50 0.35 mg/L (Pseudokirchneriella subcapitata)	LC50 0.8 mg/L (Oncorhynchus mykiss) 96 h LC50 5.46 mg/L	LC100 1 mg/L (Orconectes rusticus) 96 h

	96 h	(Pimephales promelas) 96 h LC50 0.7 mg/L (Lepomis macrochirus) 96 h	

Persistence and degradability

Kit Component **7006: Buffer A (4X)**
Persistence and degradability Results show, that both long and short chain 4-tert-OPnEO are not readily biodegradable using standard test methods.

Kit Component **7007: Buffer B (4X)**
Persistence and degradability Product is biodegradable

Kit Component **7008: ChIP Buffer (10X)**
Persistence and degradability Not readily biodegradable

Kit Component **10007: DNA Binding Buffer**
Persistence and degradability Readily biodegradable

Kit Component **7012: Protease Inhibitor Cocktail (200X)**
Persistence and degradability Degrades to dimethyl sulfide.

Bioaccumulation

Kit Component **7007: Buffer B (4X)**
Bioaccumulation Not likely to bioaccumulate

Kit Component **10007: DNA Binding Buffer**
Bioaccumulation Not likely to bioaccumulate

Kit Component **7012: Protease Inhibitor Cocktail (200X)**
Bioaccumulation Not likely to bioaccumulate

Chemical name	Octanol-Water Partition Coefficient
glycerol	-1.76
dimethyl sulfoxide	-2.03
propan-2-ol	0.05
guanidinium chloride	-1.7
sodium dodecyl sulphate	1.6

Mobility

Kit Component **7012: Protease Inhibitor Cocktail (200X)**
Mobility Will likely be mobile in the environment due to its water solubility

Other adverse effects

No information available.

SECTION 13. Disposal considerations

Waste Disposal Methods

Dispose of in accordance with all applicable national environmental laws and regulations.

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 14. Transport information

This material is subject to regulation as a hazardous material for shipping:

DOT

UN number	UN3316
UN proper shipping name	Chemical Kits
Transport hazard class(es)	9
Packing group	III
Special provisions	15
Emergency response guide number	171

IATA

UN number	UN3316
UN proper shipping name	Chemical Kits
Transport hazard class(es)	9
Packing group	II
Special provisions	A163, A44

SECTION 15. Regulatory information

North American Inventory Listing

Chemical name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
glycerol	Listed	Not Listed	Listed	Not Listed
(R*,R*)-1,4-dimercaptobutane-2,3-diol	Listed	Not Listed	Listed	Not Listed
dimethyl sulfoxide	Listed	Not Listed	Listed	Not Listed
sucrose	Listed	Not Listed	Listed	Not Listed
propan-2-ol	Listed	Not Listed	Listed	Not Listed
guanidinium chloride	Listed	Not Listed	Listed	Not Listed
sodium chloride	Listed	Not Listed	Listed	Not Listed
glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, sodium salt, hydrate (1:2:2)	Not Listed	Not Listed	Listed	Not Listed
trometamol	Listed	Not Listed	Listed	Not Listed
polyethylene glycol p-(1,1,3,3-tetramethylbutyl)phenylether	Listed	Not Listed	Listed	Not Listed
glycine	Listed	Not Listed	Listed	Not Listed
2-[2-[4-(2,4,4-trimethylpentan-2-yl)phenoxy]ethoxy]ethanol	Listed	Not Listed	Listed	Not Listed
potassium chloride	Listed	Not Listed	Listed	Not Listed
sodium dodecyl sulphate	Listed	Not Listed	Listed	Not Listed
sodium hydroxide	Listed	Not Listed	Listed	Not Listed
2-amino-2-(hydroxymethyl)propane-1,3-diol hydrochloride	Listed	Not Listed	Listed	Not Listed
sodium 3-alpha,12-alphadihydroxy-5beta-cholan-24-oate	Listed	Not Listed	Listed	Not Listed
nuclease, ribo-	Listed	Not Listed	Not Listed	Listed
sodium azide	Listed	Not Listed	Listed	Not Listed

SARA 313

Refer to kit component SDS for full SARA Section 313 reporting requirements.

Chemical name	CAS No	SARA 313 - Threshold Values %
propan-2-ol	67-63-0	1.0
hydrochloric acid	7647-01-0	1.0
hydrochloric acid	7647-01-0	1.0
sodium azide	26628-22-8	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Refer to kit component SDS for full Clean Water Act (CWA) reporting requirements.

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances	CWA - Bioaccumulative Chemicals of Concern (BCCs)
sodium hydroxide	1000 lb	Not Listed	Not Listed	Listed	Not Listed

CERCLA

Refer to kit component SDS for full Comprehensive Environmental Response Compensation and Liability Act (CERCLA) reporting requirements.

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
sodium hydroxide	1000 lb	Not Listed
sodium azide	1000 lb	1000 lb

California Proposition 65

Refer to kit component SDS for full California Proposition 65 information.

U.S. State Right-to-Know Regulations

Refer to kit component SDS for applicable State Right-To-Know (RTK) information.

Chemical name	New Jersey	Massachusetts	Pennsylvania
glycerol	Listed	Listed	Listed
dimethyl sulfoxide	Listed	Not Listed	Not Listed
sucrose	Not Listed	Listed	Listed
propan-2-ol	Listed	Listed	Listed
sodium hydroxide	Listed	Listed	Listed
edetic acid	Listed	Listed	Listed
hydrochloric acid	Listed	Listed	Listed
hydrochloric acid	Listed	Listed	Listed
sodium azide	Listed	Listed	Listed

SECTION 16. Other information

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet