

SECTION 1: PRODUCT IDENTIFIER & IDENTIFIER FOR THE CHEMICAL

Product Identifier

Product Form: Mixture

Product Name: CAG/CTG PCR Mix

Product Reference #: 145586

Intended Use of the Product

Lab reagents.

Name, Address, and Telephone of the Responsible Party

Company

Asuragen, Inc.

2150 Woodward St. Suite 100

Austin, TX 78744

USA

T: +1 512-681-5200

USA, Toll-free T: +1 877-777-1874

E-mail: support@asuragen.com

Web address: www.asuragen.com

Importer

Emergency Telephone Number

Emergency Number : Tel: +1 -512-681-5200 US

Toll-free Tel: 1-877-777-1874

(Australia)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-AU)

Not classified.

Label Elements

GHS-AU Labelling

No labelling applicable

Non-GHS Hazards

No additional information available

Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Used product may be biologically contaminated. Follow all institutional protocols concerning the potential release of pathogens.

Unknown Acute Toxicity

No additional information available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

Not applicable

Mixture

Name	Product Identifier	%*	GHS-AU Classification
Dimethyl sulfoxide	(CAS-No.) 67-68-5	9.32	Flam. Liq. 4, H227 Skin Corr./Irrit. Not classified
1,2,3-Propanetriol	(CAS-No.) 56-81-5	0.04	Not classified.

*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%)

Full text of H-statements: see section 16

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

SECTION 4: FIRST AID MEASURES

Description of First-aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). If product is biologically contaminated, follow all institutional protocols concerning the potential release of pathogens.

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 5 minutes. Obtain medical attention if irritation develops or persists.

Eye Contact: Rinse cautiously with water for at least 5 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation develops or persists.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

Personal Protection in First Aid and Measures: Use appropriate personal protective equipment (PPE).

Most Important Symptoms and Effects Both Acute and Delayed

General: Not expected to present a significant hazard under anticipated conditions of normal use.

Inhalation: Prolonged exposure may cause irritation.

Skin Contact: Prolonged exposure may cause skin irritation.

Eye Contact: May cause slight irritation to eyes.

Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Water spray, fog, carbon dioxide (CO₂), alcohol-resistant foam, or dry chemical.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures.

Explosion Hazard: Product is not explosive.

Reactivity: Hazardous reactions will not occur under normal conditions.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Carbon oxides (CO, CO₂). Sulfur oxides. Nitrogen oxides. Magnesium oxides. Chlorine compounds. Acrolein. Dimethyl sulfide. Formaldehyde. Methylmercaptan.

HAZCHEM Emergency Action Code (Australia): Not applicable

Reference to Other Sections

Refer to Section 9 for Flammability Properties

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapour, mist, spray). If product is biologically contaminated, follow all institutional protocols concerning the potential release of pathogens.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protective equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognise the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

Methods and Materials for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill.

Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Precautions for Safe Handling: Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapour, mist, spray). Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. If product is biologically contaminated, follow all institutional protocols concerning the potential release of pathogens.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.

Storage Conditions: Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidisers. acyl halides.

Specific End Use(s)

Lab reagents.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), and Australia OELs.

Dimethyl sulfoxide (67-68-5)		
USA AIHA	WEEL TWA [ppm]	250 ppm
1,2,3-Propanetriol (56-81-5)		
Australia	OES TWA [1]	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-inhalable dust, mist)

Exposure Controls

Appropriate Engineering Controls: Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment

Personal Protective Equipment: Gloves. Protective clothing. Protective goggles.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear protective gloves.

Eye and Face Protection: Chemical safety goggles.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

Other Information: When using, do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance/Colour	: Clear/colourless
Odour	: Odourless
pH	: No data available

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: No data available
Auto-ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability	: Not applicable
Lower Flammable Limit	: No data available
Upper Flammable Limit	: No data available
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative Density	: No data available
Specific Gravity	: 1.4 g/ml
Solubility	: No data available
Partition Coefficient n-Octanol/Water	: No data available
Viscosity, Kinematic	: No data available
Particle Size	: No data available
Particle Size Distribution	: No data available
Particle Shape	: No data available
Particle Size Distribution	: No data available

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Hazardous reactions will not occur under normal conditions.

10.2. Chemical Stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of Hazardous Reactions

Hazardous polymerisation will not occur.

10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials

Strong acids, strong bases, strong oxidisers. acyl halides.

10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Carbon oxides (CO, CO₂). Sulfur oxides. Nitrogen oxides. Magnesium oxides. Chlorine compounds. Acrolein. dimethyl Sulfide. Formaldehyde. Methylmercaptan.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Likely routes of exposure: Dermal, Ingestion, Inhalation, Eye contact.

Acute Toxicity (Oral): Not classified.

Acute Toxicity (Dermal): Not classified.

Acute Toxicity (Inhalation): Not classified.

LD50 and LC50 Data:

No additional information available

Skin Corrosion/Irritation: Not classified.

Serious Eye Damage/Irritation: Not classified.

Respiratory or Skin Sensitisation: Not classified.

Germ Cell Mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive Toxicity: Not classified.

Specific Target Organ Toxicity (Single Exposure): Not classified.

Specific Target Organ Toxicity (Repeated Exposure): Not classified.

Aspiration Hazard: Not classified.

Symptoms/Injuries After Inhalation: Prolonged exposure may cause irritation.

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

Symptoms/Injuries After Skin Contact: Prolonged exposure may cause skin irritation.

Symptoms/Injuries After Eye Contact: May cause slight irritation to eyes.

Symptoms/Injuries After Ingestion: Ingestion may cause adverse effects.

Chronic Symptoms: None expected under normal conditions of use.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Dimethyl sulfoxide (67-68-5)	
LD50 Oral Rat	28300 mg/kg (Source: OECD_SID5)
LD50 Dermal Rat	40000 mg/kg (Source: ECHA_API)
LC50 Inhalation Rat	> 5.33 mg/l/4h

1,2,3-Propanetriol (56-81-5)	
LD50 Oral Rat	12600 mg/kg (Source: NLM_CIP)
LD50 Dermal Rabbit	> 10 g/kg (Source: NLM_CIP)
LC50 Inhalation Rat	> 2.75 mg/l/4h (No mortalities)

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Hazardous To The Aquatic Environment, Short-Term (Acute): Not classified.

Hazardous To The Aquatic Environment, Long-Term (Chronic): Not classified.

Dimethyl sulfoxide (67-68-5)	
LC50 Fish 1	34000 mg/l (Exposure time: 96 h - Species: Pimephales promelas Source: EPA)
EC50 - Crustacea [1]	6830 mg/l
LC50 Fish 2	33 – 37 g/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static] Source: IUCLID)
1,2,3-Propanetriol (56-81-5)	
LC50 Fish 1	54000 (51000 – 57000) mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static])

Persistence and Degradability

CAG/CTG PCR Mix	
Persistence and Degradability	Not established.

Bioaccumulative Potential

CAG/CTG PCR Mix	
Bioaccumulative Potential	Not established.
Dimethyl sulfoxide (67-68-5)	
Partition coefficient n-octanol/water (Log Pow)	-1.35 (at 20 °C (at pH 7)
1,2,3-Propanetriol (56-81-5)	
BCF Fish 1	(no bioaccumulation)
Partition coefficient n-octanol/water (Log Pow)	-1.75 (at 25 °C (at pH 7.4)

Mobility in Soil

No additional information available

Other Adverse Effects

Other Information: Avoid release to the environment.

Ozone: Not classified.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Additional Information: Biologically contaminated materials should be incinerated.

Ecology - Waste Materials: Avoid release to the environment.

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

According to the UNRTDG and ADG Code

Not regulated for transport

HAZCHEM Emergency Action : Not applicable.

Code (Australia)

SECTION 15: REGULATORY INFORMATION

National Regulations

Dimethyl sulfoxide (67-68-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed on the Canadian IDL (Ingredient Disclosure List)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

1,2,3-Propanetriol (56-81-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

International Agreements

1,2,3-Propanetriol (56-81-5)

This chemical is subject to the International Convention for the Prevention of Pollution from Ships (MARPOL)

Australia National Regulations

Dimethyl sulfoxide (67-68-5)

Relevant Poisons Schedule number	Schedule 6
----------------------------------	------------

1,2,3-Propanetriol (56-81-5)

High Volume Industrial Chemicals List	Present
---------------------------------------	---------

SECTION 16: ADDITIONAL INFORMATION

Date of Preparation or Latest : 16/05/2024

Revision

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

- Data Sources** : Information and data obtained and used in the authoring of this safety data sheet could come from database subscriptions, official government regulatory body websites, product/ingredient manufacturer or supplier specific information, and/or resources that include substance specific data and classifications according to GHS or their subsequent adoption of GHS.
- Other Information** : In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

GHS Full Text Phrases:

Flam. Liq. 4	Flammable liquids, Category 4
Skin Corr./Irrit. Not classified	Skin corrosion/irritation Not classified
H227	Combustible liquid

Indication of Changes

No additional information available

Abbreviations and Acronyms

ACGIH – American Conference of Governmental Industrial Hygienists	Log Pow - Ratio of the equilibrium concentration (C) of a dissolved substance in a two-phase system consisting of two largely immiscible solvents, in this case octanol and water
ADG – Australian Dangerous Goods (Code)	NOAEL - No-Observed Adverse Effect Level
AIHA – American Industrial Hygiene Association	NOEC - No-Observed Effect Concentration
ATE - Acute Toxicity Estimate	NTP – National Toxicology Program
AU - Australia	OEL - Occupational Exposure Limits
BCF - Bioconcentration Factor	pH – Potential Hydrogen
BEI - Biological Exposure Indices (BEI)	SADT - Self Accelerating Decomposition Temperature
BOD – Biochemical Oxygen Demand	SDS - Safety Data Sheet
CAS No. - Chemical Abstracts Service Number	STEL - Short Term Exposure Limit
COD – Chemical Oxygen Demand	ThOD – Theoretical Oxygen Demand
EC50 - Median Effective Concentration	TLM - Median Tolerance Limit
ErC50 - EC50 in Terms of Reduction Growth Rate	TLV - Threshold Limit Value
EU - European Union	TPQ - Threshold Planning Quantity
GHS – Globally Harmonized System of Classification and Labeling of Chemicals	TWA - Time Weighted Average
IARC - International Agency for Research on Cancer	UN – United Nations
LC50 - Median Lethal Concentration	UN RTDG – United Nations Recommendations on the Transport of Dangerous Goods
LD50 - Median Lethal Dose	VOC – Volatile Organic Compounds
LOAEL - Lowest Observed Adverse Effect Level	WEEL - Workplace Environmental Exposure Levels
LOEC - Lowest-Observed-Effect Concentration	
Log Koc - Soil Organic Carbon-water Partitioning Coefficient	
Log Kow - Octanol/water Partition Coefficient	

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)	FOOD_JOURN: Food Research Journal (1956)
AU_WES: Australia WES	IARC: The International Agency for Research on Cancer
CHEMVIEW: ChemView (U.S. Environmental Protection Agency)	IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles
EC_RAR: European Commission Renewal Assessment Report	IUCLID: International Uniform Chemical Information Database
EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits	JAPAN_GHS: Japan GHS Basis for Classification Data
ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports	JP_J-CHECK: Japan J-Check
ECHA_API: European Chemicals Agency API	KR_NIER: South Korea National Institute of Environmental Research Evaluations
ECHA_RAC: ECHA Committee for Risk Assessment	NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme
EFSA: European Food Safety Authority	NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)
EPA: U.S. Environmental Protection Agency	NLM_CIP: National Library of Medicine ChemID plus database
EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)	NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank
EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)	NLM_PUBMED: National Library of Medicine PubMed database
EPA_HPVC: High Production Volume Chemicals (U.S. Environmental Protection Agency)	NTP: National Toxicology Program
EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)	NZ_CCID: New Zealand Chemical Classification and Information Database
EU_CLH: European Union Harmonised Classification and Labelling Proposal	OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)
EU_RAR: European Union Risk Assessment Report	OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)
	WHO: World Health Organization

CAG/CTG PCR Mix

Safety Data Sheet

In accordance with The Model Work Health and Safety Regulations, and the Globally Harmonized System of Classification and Labelling of Chemicals 7th Revised Edition.

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Australia GHS SDS