

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product Identifier

Product Form	: Mixture
Product Name	: PATsmart™ ZipChip® Charge Variant Analysis Reagents
Synonyms	: ZipChip Charge Variant Analysis Additive, ZipChip Charge Variant Analysis BGE, ZipChip Charge Variant Analysis Diluent

1.2. Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

1.2.1. Relevant Identified Uses

Use of the Substance/Mixture	: For research and development use only.
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1.2.2. Uses Advised Against

No additional information available

1.3. Details of the Supplier of the Safety Data Sheet

Company

Repligen Corporation
111 Locke Drive
Marlborough, MA 01752
USA
+1 508-845-6400

customerserviceUS@repligen.com

1.4. Emergency Telephone Number

Emergency Number	: VelocityEHS (800)255-3924 (North America) +1 (813)248-0585 (International)
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SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification According to the GB CLP Regulation

Flammable liquids, Category 3 H226

2.2. Label Elements

Labelling According to the GB CLP Regulation

Hazard Pictograms (GB CLP) :



GHS02

Signal Word (GB CLP)	: Warning
Hazard Statements (GB CLP)	: H226 - Flammable liquid and vapour.
Precautionary Statements (GB CLP)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P240 - Ground and bond container and receiving equipment. P241 - Use explosion-proof electrical/ventilating/lighting equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P280 - Wear protective gloves, protective clothing, and eye protection. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water . P370+P378 - In case of fire: Use appropriate media to extinguish. P403+P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other Hazards

Contains no PBT and/or vPvB substances $\geq 0,1\%$ assessed in accordance with REACH Annex XIII

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Other Hazards Not Contributing to the Classification : Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product Identifier	%	Classification According to the GB CLP Regulation
Isopropyl alcohol	(CAS-No.) 67-63-0 (EC-No.) 200-661-7 (EC Index-No.) 603-117-00-0	5 – 10	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Dimethyl sulfoxide	(CAS-No.) 67-68-5 (EC-No.) 200-664-3	1 – 5	Not classified.

Full text of H-statements: see section 16.

SECTION 4: FIRST AID MEASURES

4.1. Description of First-aid Measures

- 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).
- First-Aid Measures After Inhalation** : When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.
- First-Aid Measures After Skin Contact** : Remove contaminated clothing. Drench affected area with water for at least 5 minutes. In case of contamination of larger areas, rinse skin with water/shower. Obtain medical attention if irritation develops or persists.
- First-Aid Measures After 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.
- First-Aid Measures After Ingestion** : Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

4.2. Most Important Symptoms and Effects Both Acute and Delayed

- Symptoms/Effects** : Not expected to present a significant hazard under anticipated conditions of normal use.
- Symptoms/Effects After Inhalation** : Prolonged exposure may cause irritation.
- Symptoms/Effects After Skin Contact** : Prolonged exposure may cause skin irritation.
- Symptoms/Effects After Eye Contact** : May cause slight irritation to eyes.
- Symptoms/Effects After Ingestion** : Ingestion may cause adverse effects.
- Chronic Symptoms** : None expected under normal conditions of use.

4.3. 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: FIREFIGHTING MEASURES

5.1. Extinguishing Media

- Suitable Extinguishing Media** : Dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).
- Unsuitable Extinguishing Media** : None known.

5.2. Special Hazards Arising From the Substance or Mixture

- Fire Hazard** : Flammable liquid and vapour. Does not sustain combustion. Flashes only.
- Explosion Hazard** : May form flammable or explosive vapour-air mixture. Will not sustain combustion.
- Reactivity** : Hazardous reactions will not occur under normal conditions.
- Hazardous Decomposition Products in Case of Fire** : Oxides of carbon, nitrogen, and sulphur.

5.3. Advice for Firefighters

- Precautionary Measures Fire** : Exercise caution when fighting any chemical fire.
- Firefighting Instructions** : Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
- Protection During Firefighting** : Do not enter fire area without proper protective equipment, including respiratory protection.
- Other Information** : Alcohol resistant foams are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

- General Measures** : Do not get in eyes, on skin, or on clothing. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Use special care to avoid static electric charges. Avoid breathing (vapour, mist, spray).
- 6.1.1. For Non-Emergency Personnel**
- Protective Equipment** : Use appropriate personal protective equipment (PPE).
- Emergency Procedures** : Evacuate unnecessary personnel. Stop leak if safe to do so.
- Measures In Case Of Dust Release** : Not applicable.
- 6.1.2. For Emergency Responders**
- Protective Equipment** : Equip cleanup crew with proper protection.
- Emergency Procedures** : Eliminate ignition sources first, then ventilate the area. 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.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up

- For Containment** : As an immediate precautionary measure, isolate spill or leak area in all directions. 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. Do not take up in combustible material such as: saw dust or cellulosic material. Contact competent authorities after a spill. Transfer spilled material to a suitable container for disposal. Use only non-sparking tools.
- Other Information** : No additional information available.

6.4. Reference to Other Sections

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

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

- Additional Hazards When Processed** : Handle empty containers with care because residual vapours are flammable.
- Precautions for Safe Handling** : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Avoid breathing (vapour, mist, spray).
- Handling Temperature** : No temperature range given. See Section 9 for Flash Point information.
- Hygiene Measures** : Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

- Technical Measures** : Comply with applicable regulations. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment.
- Storage Conditions** : Store in accordance with applicable national storage class systems. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store in a well-ventilated place. Keep container tightly closed. Keep in fireproof place. Keep container closed when not in use.
- Incompatible Materials** : Strong acids, strong bases, strong oxidisers.
- Storage Temperature** : No temperature range given. See Section 9 for Flash Point information.
- Heat and ignition sources** : Do not expose to heat, or ignition sources as this could cause an explosion.
- Information on mixed storage** : Keep/Store away from strong oxidisers.
- Storage Area** : Store in a well-ventilated place. Keep cool.

7.3. Specific End Use(S)

For research and development use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Please see section 16 for the legal basis of limit value information in section 8.1, including the national legislation or provision which gives rise to a given limit.

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Isopropyl alcohol (67-63-0)		
United Kingdom	WEL TWA (Legal Basis:EH40)	999 mg/m ³
United Kingdom	WEL TWA (Legal Basis:EH40)	400 ppm
United Kingdom	WEL STEL (Legal Basis:EH40)	1250 mg/m ³
United Kingdom	WEL STEL (Legal Basis:EH40)	500 ppm

8.2. 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. Gas detectors should be used when flammable gases or vapours may be released. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment.

Personal Protective Equipment

: Gloves. Protective clothing. Protective goggles or glasses. Face shield. Insufficient ventilation: wear respiratory protection. Personal protective equipment should be chosen in accordance with Regulation (EU) 2016/425, CEN standards, and in discussion with the supplier of the protective equipment.



Materials for Protective Clothing

: Chemically resistant materials and fabrics. Wear fire/flame resistant/retardant clothing.

Hand Protection

: Wear protective gloves.

Eye Protection

: Chemical goggles or safety glasses. Faceshield as determined by task.

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.

Thermal Hazard Protection

: Wear fire/flame resistant/retardant clothing.

Environmental Exposure Controls

: Avoid unnecessary release into the environment.

Consumer Exposure Controls

: Not applicable.

Other Information

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State	: Liquid
Appearance	: Clear, colorless liquid
Colour	: No data available
Odour	: Slight alcohol-like
Odour Threshold	: No data available
pH	: No data available
Evaporation Rate	: No data available
Melting Point	: No data available
Freezing Point	: No data available
Boiling Point	: No data available
Flash Point	: ≈ 41 °C [Estimation only]
Auto-Ignition Temperature	: No data available
Decomposition Temperature	: No data available
Flammability	: Not applicable
Vapour Pressure	: No data available
Relative Vapour Density At 20°C	: No data available
Relative Density	: No data available
Solubility	: Water: Soluble
Partition Coefficient n-Octanol/Water	: No data available
Viscosity	: No data available
Explosive Properties	: No data available
Oxidising Properties	: No data available
Explosive Limits	: No data available

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9.2. Other Information

No additional information 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. Sustained combustion is not expected from this product. Product expected to flash only.

10.4. Conditions to Avoid

Direct sunlight, extremely high or low temperatures, heat, hot surfaces, sparks, open flames, incompatible materials, and other ignition sources. Direct sunlight, extremely high or low temperatures, and incompatible materials.

10.5. Incompatible Materials

Strong acids, strong bases, strong oxidisers.

10.6. Hazardous Decomposition Products

Thermal decomposition may produce: Oxides of carbon, nitrogen, and sulphur.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Likely Routes of Exposure	: Dermal, Ingestion, Inhalation, Eye contact
Acute Toxicity (Oral)	: Not classified. (Based on available data, the classification criteria are not met)
Acute Toxicity (Dermal)	: Not classified. (Based on available data, the classification criteria are not met)
Acute Toxicity (Inhalation)	: Not classified. (Based on available data, the classification criteria are not met)

Isopropyl alcohol (67-63-0)	
LD50 Oral Rat	1870 mg/kg (No deaths - not classifiable)
LD50 Dermal Rabbit	12956 mg/kg (16.4 mL/kg bw)
LC50 Inhalation Rat	> 10000 ppm (Exposure time: 6 h Source: ECHA_API)
Dimethyl sulfoxide (67-68-5)	
LD50 Oral Rat	28300 mg/kg (Source: OECD_SIDS)
LD50 Dermal Rat	40000 mg/kg (Source: ECHA_API)
LC50 Inhalation Rat	> 5.33 mg/l/4h

Skin Corrosion/Irritation	: Not classified. (Based on available data, the classification criteria are not met)
Eye Damage/Irritation	: Not classified. (Based on available data, the classification criteria are not met)
Respiratory or Skin Sensitisation	: Not classified. (Based on available data, the classification criteria are not met)
Germ Cell Mutagenicity	: Not classified. (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified. (Based on available data, the classification criteria are not met)

Isopropyl alcohol (67-63-0)	
IARC Group	3

Reproductive Toxicity	: Not classified. (Based on available data, the classification criteria are not met)
Specific Target Organ Toxicity (Single Exposure)	: Not classified. (Based on available data, the classification criteria are not met)
Specific Target Organ Toxicity (Repeated Exposure)	: Not classified. (Based on available data, the classification criteria are not met)
Aspiration Hazard	: Not classified. (Based on available data, the classification criteria are not met)
Symptoms/Injuries After Inhalation	: Prolonged exposure may cause irritation.
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.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Hazardous To The Aquatic Environment, Short-Term (Acute)	: Not classified. (Based on available data, the classification criteria are not met)
Hazardous To The Aquatic Environment, Long-Term (Chronic)	: Not classified. (Based on available data, the classification criteria are not met)

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Isopropyl alcohol (67-63-0)	
LC50 - Fish [1]	9640 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through] Source: IUCLID)
EC50 - Crustacea [1]	13299 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Other aquatic organisms [1]	1000 mg/l (Exposure time: 96 h - Species: Desmodesmus subspicatus)
LC50 - Fish [2]	11130 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: IUCLID)
EC50 - Other aquatic organisms [2]	1000 mg/l (Exposure time: 72 h - Species: Desmodesmus subspicatus)
ErC50 algae	1000 mg/l
NOEC chronic crustacea	100 mg/l
Acetic acid (64-19-7)	
LC50 - Fish [1]	79 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static] Source: EPA)
EC50 - Crustacea [1]	65 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 - Fish [2]	75 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static] Source: EPA)
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)

12.2. Persistence and Degradability

PATsmart™ ZipChip® Charge Variant Analysis Reagents	
Persistence and Degradability	Expected to be biodegradable.

12.3. Bioaccumulative potential

PATsmart™ ZipChip® Charge Variant Analysis Reagents	
Bioaccumulative Potential	Not expected to bioaccumulate.
Isopropyl alcohol (67-63-0)	
Partition coefficient n-octanol/water (Log Pow)	0.05 (at 25 °C)
Acetic acid (64-19-7)	
Partition coefficient n-octanol/water (Log Pow)	-0.17 (at 25 °C (at pH 7)
Dimethyl sulfoxide (67-68-5)	
Partition coefficient n-octanol/water (Log Pow)	-1.35 (at 20 °C (at pH 7)

12.4. Mobility in Soil

PATsmart™ ZipChip® Charge Variant Analysis Reagents	
Ecology - Soil	Adsorbs into the soil. Leaches if exposed to water.

12.5. Results Of PBT And VPvB Assessment

No additional information available

12.6. Other adverse effects

Other Adverse Effects	: None known.
Other Information	: Avoid unnecessary release into the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Regional Legislation (Waste)	: Disposal must be done according to official regulations.
Waste Treatment Methods	: Incineration is the preferred method for disposal of waste product. . Can be landfilled, when in compliance with local regulations.
Sewage Disposal Recommendations	: Do not dispose of waste into sewer. Do not empty into drains.
Product/Packaging Disposal Recommendations	: Dispose of contents/container in accordance with local, regional, national, and international regulations.
Additional Information	: Container may remain hazardous when empty. Continue to observe all precautions.
Ecological Waste Information	: Avoid unnecessary release into the environment.

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. In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN Number	
Not regulated for transport (Not classified for transport under IATA Special Provision A58, IMDG and ADR SP 144)	
14.2. UN Proper Shipping Name	
Not regulated for transport	

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14.3. Transport Hazard Class(Es)

Not regulated for transport

14.4. Packing Group

Not regulated for transport

14.5. Environmental Hazards

Not regulated for transport

14.6. Special Precautions For User

No additional information available

14.7. Transport in Bulk According to Annex II of MARPOL and The IBC Code

Not applicable

SECTION 15: REGULATORY INFORMATION

15.1. Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

15.1.1. EU-Regulations

15.1.1.1. REACH Annex XVII Information

Listed on REACH Annex XVII (Restriction Conditions). The following restrictions are applicable:

3(a) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 2.1 to 2.4, 2.6 and 2.7, 2.8 types A and B, 2.9, 2.10, 2.12, 2.13 categories 1 and 2, 2.14 categories 1 and 2, 2.15 types A to F	Isopropyl alcohol
3(b) Substances or mixtures fulfilling the criteria for any of the following hazard classes or categories set out in Annex I to Regulation (EC) No 1272/2008: Hazard classes 3.1 to 3.6, 3.7 adverse effects on sexual function and fertility or on development, 3.8 effects other than narcotic effects, 3.9 and 3.10	Isopropyl alcohol
40. Substances classified as flammable gases category 1 or 2, flammable liquids categories 1, 2 or 3, flammable solids category 1 or 2, substances and mixtures which, in contact with water, emit flammable gases, category 1, 2 or 3, pyrophoric liquids category 1 or pyrophoric solids category 1, regardless of whether they appear in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or not.	Isopropyl alcohol

15.1.1.2. REACH Candidate List Information

Contains no substance(s) listed on the REACH Candidate List

15.1.1.3. POP (2019/1021) - Persistent Organic Pollutants Information

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

15.1.1.4. PIC Regulation EU (649/2012) - Export and Import of Hazardous Chemicals Information

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

15.1.1.5. REACH Annex XIV Information

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

15.1.1.6. Substances Depleting the Ozone layer (1005/2009) Information

No additional information available

15.1.1.7. EC Inventory Information

Water (7732-18-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Isopropyl alcohol (67-63-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Ammonium acetate (631-61-8)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Acetic acid (64-19-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)
Dimethyl sulfoxide (67-68-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.1.1.8. Other Information

No additional information available

15.1.2. National Regulations

No additional information available

15.1.3. International Inventory Lists

Water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances 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 INSQ (Mexican National Inventory of Chemical Substances)

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Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemical Inventory)
Listed on Thailand Existing Chemicals Inventory (DIW)

Isopropyl alcohol (67-63-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
Listed on the Canadian IDL (Ingredient Disclosure List)
Subject to reporting requirements of United States SARA Section 313
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)

Ammonium acetate (631-61-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances 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)

Acetic acid (64-19-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on the Canadian DSL (Domestic Substances List)
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)

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 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)
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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)

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out

SECTION 16: OTHER INFORMATION

Date of Preparation or Latest Revision : 05/01/2026

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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	: Acc. to 2019 No. 758 - REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 and subsequent amendments

Full Text of H- and EUH-statements:

Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Met. Corr. 1	Corrosive to metals, Category 1
Skin Corr. 1A	Skin corrosion/irritation, Category 1, Sub-Category 1A
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H290	May be corrosive to metals.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Classification and Procedure Used to Derive the Classification for Mixtures According to the GB CLP Regulation:

Flam. Liq. 3	Expert judgement
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Indication of Changes

No additional information available

Abbreviations and Acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
ADN – European Agreement Concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
ATE - Acute Toxicity Estimate
BCF - Bioconcentration Factor
BEI - Biological Exposure Indices (BEI)
BOD – Biochemical Oxygen Demand
CAS No. - Chemical Abstracts Service Number
COD – Chemical Oxygen Demand
EC – European Community
EC50 - Median Effective Concentration
EEC – European Economic Community
EINECS – European Inventory of Existing Commercial Chemical Substances
EmS-No. (Fire) - IMDG Emergency Schedule Fire
EmS-No. (Spillage) - IMDG Emergency Schedule Spillage
EU – European Union
ErC50 - EC50 in Terms of Reduction Growth Rate
GB CLP - Great Britain Classification, Labelling and Packaging Regulation
GHS – Globally Harmonized System of Classification and Labeling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC Code - International Bulk Chemical Code
IMDG - International Maritime Dangerous Goods
IOELV – Indicative Occupational Exposure Limit Value
LC50 - Median Lethal Concentration
LD50 - Median Lethal Dose
LOAEL - Lowest Observed Adverse Effect Level

LOEC - Lowest-Observed-Effect Concentration
Log Koc - Soil Organic Carbon-water Partitioning Coefficient
Log Kow - Octanol/water Partition Coefficient
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
MARPOL - International Convention for the Prevention of Pollution
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
NTP – National Toxicology Program
OEL - Occupational Exposure Limits
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
pH – Potential Hydrogen
REACH – Registration, Evaluation, Authorisation, and Restriction of Chemicals
RID – Regulations Concerning the International Carriage of Dangerous Goods by Rail
SADT - Self Accelerating Decomposition Temperature
SDS - Safety Data Sheet
STEL - Short Term Exposure Limit
STOT - Specific Target Organ Toxicity
ThOD – Theoretical Oxygen Demand
TLM - Median Tolerance Limit
TLV - Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA - Time Weighted Average
VOC – Volatile Organic Compounds
vPvB - Very Persistent and Very Bioaccumulative
WEL – Workplace Exposure Limit

PATsmart™ ZipChip® Charge Variant Analysis Reagents

Safety Data Sheet

Acc. to 2019 No. 758 - REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 and subsequent amendments

Limit Value Legal Basis*

*Includes the below and any related regulations/provisions, and subsequent amendments

United Kingdom - EH40 - EH40/2005 Containing the workplace exposure limits (WELs) for use with the Control of Substances Hazardous to Health Regulations (COSHH) (as amended)

Glossary of Data Source Abbreviations

ATSDR: Agency for Toxic Substances and Disease Registry (U.S. Department of Health and Human Services)

AU_WES: Australia WES

CHEMVIEW: ChemView (U.S. Environmental Protection Agency)

EC_RAR: European Commission Renewal Assessment Report

EC_SCOEL: European Commission Scientific Committee on Occupational Exposure Limits

ECETOC: European Centre for Ecotoxicology and Toxicology of Chemicals Reports

ECHA_API: European Chemicals Agency API

ECHA_RAC: ECHA Committee for Risk Assessment

EFSA: European Food Safety Authority

EPA: U.S. Environmental Protection Agency

EPA_AEGL: Acute Exposure Guideline Levels (U.S. Environmental Protection Agency)

EPA_FIFRA: Federal Insecticide, Fungicide, and Rodenticide Act Reregistration Eligibility Decision (U.S. Environmental Protection Agency)

EPA_HPVC: High Production Volume Chemicals (U.S. Environmental Protection Agency)

EPA_TRED: Risk Assessment for Tolerance Reassessment Eligibility Decision (U.S. Environmental Protection Agency)

EU_CLH: European Union Harmonised Classification and Labelling Proposal

EU_RAR: European Union Risk Assessment Report

FOOD_JOURN: Food Research Journal (1956)

IARC: The International Agency for Research on Cancer

IDLH: National Institute for Occupational Health and Safety Immediately Dangerous to Life or Health Value Profiles

IUCLID: International Uniform Chemical Information Database

JAPAN_GHS: Japan GHS Basis for Classification Data

JP_J-CHECK: Japan J-Check

KR_NIER: South Korea National Institute of Environmental Research Evaluations

NICNAS: Australia National Industrial Chemicals Notification and Assessment Scheme

NIOSH: National Institute for Occupational Health and Safety (U.S. Department of Health and Human Services)

NLM_CIP: National Library of Medicine ChemID plus database

NLM_HSDB: National Library of Medicine Hazardous Substance Data Bank

NLM_PUBMED: National Library of Medicine PubMed database

NTP: National Toxicology Program

NZ_CCID: New Zealand Chemical Classification and Information Database

OECD_EHSP: Environment, Health, and Safety Publication (Organisation for Economic Co-operation and Development)

OECD_SIDS: Screening Information Data Sets (Organisation for Economic Co-operation and Development)

WHO: World Health Organization

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.

UK GHS SDS