

SAFETY DATA SHEET

United States

Section 1. Identification

Product name

Wash Buffer; part of '2-D Clean-Up Kit, 50 samples'

Catalogue Number

80648451



9 0 8 0 6 4 8 4 5 1

Other means of identification Not available.

Product type Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Identified uses

Analytical chemistry.

Laboratory chemicals

Scientific research and development

Industrial applications: Analytical chemistry. Laboratory use. Scientific research and development.

Supplier

Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 0800 515 313

Cytiva USA
100 Results Way
Marlborough, MA 01752
1-800-526-3593

In case of emergency

INFOTRAC - 24 Hour number: 1-800-535-5053
Outside of the United States, call 24 Hour number: 001-352-323-3500 (Call Collect)

Section 2. Hazards identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (inhalation) - Category 4
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 75%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 5%

GHS label elements

Hazard pictograms



Signal word

Danger



Hazard statements	Flammable liquid and vapor. Causes serious eye irritation. Harmful if inhaled. May cause drowsiness or dizziness. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure. Very toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.
Response	Collect spillage. IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. 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 or attention.
Storage	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known.

Section 3. Composition/information on ingredients

Substance/mixture	Mixture
Other means of identification	Not available.
CAS number/other identifiers	
CAS number	Not applicable.

Ingredient name	%	CAS number
acetone	40 - 100	67-64-1
chloroform	<5	67-66-3
hydrochloric acid	<5	7647-01-0
pentanol isomers	<5	123-51-3
propan-2-ol	<5	67-63-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects



Eye contact	Causes serious eye irritation.
Inhalation	Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Skin contact	No known significant effects or critical hazards.
Ingestion	Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures**Extinguishing media**

Suitable extinguishing media	Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical	Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
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Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide halogenated compounds carbonyl halides
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Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
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Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
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Section 6. Accidental release measures**Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".



Environmental precautions Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities Store between the following temperatures: 4 to 30°C (39.2 to 86°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name

acetone

Exposure limits

ACGIH TLV (United States, 1/2022).

STEL: 500 ppm 15 minutes.

TWA: 250 ppm 8 hours.

NIOSH REL (United States, 10/2020).

TWA: 590 mg/m³ 10 hours.

TWA: 250 ppm 10 hours.

OSHA PEL (United States, 5/2018).

TWA: 2400 mg/m³ 8 hours.

TWA: 1000 ppm 8 hours.

OSHA PEL 1989 (United States, 3/1989). Notes: The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors.

STEL: 2400 mg/m³ 15 minutes.

STEL: 1000 ppm 15 minutes.

TWA: 1800 mg/m³ 8 hours.

TWA: 750 ppm 8 hours.

chloroform

ACGIH TLV (United States, 1/2022). Notes: Substance identified by other sources as a suspected or confirmed human carcinogen. 1996 Adoption Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :



hydrochloric acid

36338-33351, June 30, 1993, for revised OSHA PEL. Refers to Appendix A -- Carcinogens.
 TWA: 49 mg/m³ 8 hours.
 TWA: 10 ppm 8 hours.
NIOSH REL (United States, 10/2020). Notes: See Appendix A - NIOSH Potential Occupational Carcinogen
 STEL: 9.78 mg/m³ 60 minutes.
 STEL: 2 ppm 60 minutes.
OSHA PEL (United States, 5/2018).
 CEIL: 240 mg/m³
 CEIL: 50 ppm
OSHA PEL 1989 (United States, 3/1989).
 TWA: 9.78 mg/m³ 8 hours.
 TWA: 2 ppm 8 hours.

pentanol isomers

ACGIH TLV (United States, 1/2022). Notes: Refers to Appendix A -- Carcinogens. ACGIH 2003 Adoption
 C: 2 ppm
NIOSH REL (United States, 10/2020).
 CEIL: 7 mg/m³
 CEIL: 5 ppm
OSHA PEL (United States, 5/2018).
 CEIL: 7 mg/m³
 CEIL: 5 ppm
OSHA PEL 1989 (United States, 3/1989).
 CEIL: 7 mg/m³
 CEIL: 5 ppm
ACGIH TLV (United States, 1/2022).
 STEL: 452 mg/m³ 15 minutes.
 STEL: 125 ppm 15 minutes.
 TWA: 361 mg/m³ 8 hours.
 TWA: 100 ppm 8 hours.
NIOSH REL (United States, 10/2020).
 STEL: 450 mg/m³ 15 minutes.
 STEL: 125 ppm 15 minutes.
 TWA: 360 mg/m³ 10 hours.
 TWA: 100 ppm 10 hours.
OSHA PEL (United States, 5/2018).
 TWA: 360 mg/m³ 8 hours.
 TWA: 100 ppm 8 hours.
OSHA PEL 1989 (United States, 3/1989).
 STEL: 450 mg/m³ 15 minutes.
 STEL: 125 ppm 15 minutes.
 TWA: 360 mg/m³ 8 hours.
 TWA: 100 ppm 8 hours.

propan-2-ol

ACGIH TLV (United States, 1/2022). Notes: Refers to Appendix A -- Carcinogens. ACGIH 2003 Adoption
 STEL: 400 ppm 15 minutes.
 TWA: 200 ppm 8 hours.
NIOSH REL (United States, 10/2020).
 STEL: 1225 mg/m³ 15 minutes.
 STEL: 500 ppm 15 minutes.
 TWA: 980 mg/m³ 10 hours.
 TWA: 400 ppm 10 hours.
OSHA PEL (United States, 5/2018).
 TWA: 980 mg/m³ 8 hours.
 TWA: 400 ppm 8 hours.
OSHA PEL 1989 (United States, 3/1989).
 STEL: 1225 mg/m³ 15 minutes.
 STEL: 500 ppm 15 minutes.
 TWA: 980 mg/m³ 8 hours.
 TWA: 400 ppm 8 hours.

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures



Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state	Liquid.
Color	Colorless.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point, initial boiling point, and boiling range	Not available.
Flash point	Closed cup: 23 to 37.8°C (73.4 to 100°F)
Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.

	Vapor Pressure at 20°C			Vapor pressure at 50°C			
	Ingredient name	mm Hg	kPa	Method	mm Hg	kPa	Method
	acetone	180.01	24				
	trichloromethane	159.01	21.2				
	Isopropyl alcohol	33	4.4				
	3-methylbutan-1-ol	3	0.4				
Relative vapor density	Not available.						
Relative density	Not available.						
Solubility(ies)	Not available.						
Solubility in water	Not available.						
Partition coefficient: n-octanol/ water	Not applicable.						
Auto-ignition temperature	Not available.						
	Ingredient name	°C	°F	Method			



	3-methylbutan-1-ol	335	635
	Isopropyl alcohol	456	852.8
	acetone	465	869
	trichloromethane	>600	>1112
Decomposition temperature	Not available.		
SADT	Not available.		
Viscosity	Not available.		
Flow time (ISO 2431)	Not available.		
Particle characteristics			
Median particle size	Not applicable.		

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
acetone	LD50 Oral	Rat	5800 mg/kg	-
trichloromethane	LC50 Inhalation Vapor	Rat	47702 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>20 g/kg	-
	LD50 Oral	Rat	300 mg/kg	-
Hydrochloric acid	LC50 Inhalation Gas.	Rat	3124 ppm	1 hours
3-methylbutan-1-ol	LD50 Oral	Rat	1300 mg/kg	-
Isopropyl alcohol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
trichloromethane	-	2B	Reasonably anticipated to be a human carcinogen.
Hydrochloric acid	-	3	-
Isopropyl alcohol	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
acetone	Category 3	-	Narcotic effects
Hydrochloric acid	Category 3	-	Respiratory tract irritation
3-methylbutan-1-ol	Category 3	-	Respiratory tract irritation
Isopropyl alcohol	Category 3	-	Narcotic effects



Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
trichloromethane	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Skin contact	No known significant effects or critical hazards.
Ingestion	Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness reduced fetal weight increase in fetal deaths skeletal malformations
Skin contact	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations
Ingestion	Adverse symptoms may include the following: reduced fetal weight increase in fetal deaths skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

Not available.

General	Causes damage to organs through prolonged or repeated exposure.
Carcinogenicity	Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
Mutagenicity	No known significant effects or critical hazards.
Reproductive toxicity	Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Wash Buffer; part of '2-D Clean-Up Kit, 50 samples'	6803.8	N/A	7904.7	11.9	N/A
acetone	5800	N/A	N/A	N/A	N/A
chloroform	500	N/A	N/A	3	N/A
hydrochloric acid	N/A	N/A	1562	N/A	N/A
pentanol isomers	1300	N/A	N/A	11	N/A
propan-2-ol	5000	12800	N/A	N/A	N/A



Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
acetone	Acute EC50 20.565 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute LC50 4.42589 ml/L Marine water	Crustaceans - Acartia tonsa - Copepodid	48 hours
	Acute LC50 10000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 5600 ppm Fresh water	Fish - Poecilia reticulata	96 hours
	Chronic NOEC 4.95 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.016 ml/L Fresh water	Crustaceans - Daphniidae	21 days
	Chronic NOEC 0.1 ml/L Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 5 µg/l Marine water	Fish - Gasterosteus aculeatus - Larvae	42 days
trichloromethane	Acute EC50 13.3 mg/l	Algae - Chlamydomonas reinhardtii - Exponential growth phase	72 hours
	Acute EC50 2.803 mg/l Fresh water	Crustaceans - Cypris subglobosa	48 hours
	Acute LC50 29 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 13.3 ppm Fresh water	Fish - Lepomis macrochirus	96 hours
	Chronic EC10 3.61 mg/l	Algae - Chlamydomonas reinhardtii - Exponential growth phase	72 hours
Hydrochloric acid	Chronic NOEC 1.8 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Acute LC50 240000 µg/l Marine water	Crustaceans - Carcinus maenas - Adult	48 hours
Isopropyl alcohol	Acute LC50 282 ppm Fresh water	Fish - Gambusia affinis - Adult	96 hours
	Acute EC50 7550 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours

Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
acetone	-	-	Readily
trichloromethane	-	-	Not readily
Isopropyl alcohol	-	95%; 21 day(s)	-

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
acetone	-0.23	<10	low
trichloromethane	1.97	690	high
Hydrochloric acid	0.25	-	low
3-methylbutan-1-ol	1.35	-	low
Isopropyl alcohol	0.05	0.5	low

Mobility in soil

Soil/water partition coefficient (K _{oc})	Not available.
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Other adverse effects No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods




The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.




United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Acetone (l)	67-64-1	Listed	U002
Chloroform	67-66-3	Listed	U044



Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification
UN number	UN1090	UN1090	UN1090
UN proper shipping name	Acetone solution	Acetone solution	Acetone solution
Transport hazard class(es)	3	3	3
			
Packing group	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes. The environmentally hazardous substance mark is not required.	Yes. The environmentally hazardous substance mark is not required.
Additional information	Reportable quantity 202.02 lbs / 91.717 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.	-

	ADR/RID	IMDG	IATA
UN number	UN1090	UN1090	UN1090
UN proper shipping name	Acetone solution	Acetone solution	Acetone solution
Transport hazard class(es)	3	3	3
			
Packing group	II	II	II
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to IMO instruments	Not available.
Proper shipping name	Not available.

Section 15. Regulatory information

U.S. Federal regulations	TSCA 8(a) CDR Exempt/Partial exemption: Not determined Clean Water Act (CWA) 307: trichloromethane Clean Water Act (CWA) 311: trichloromethane; Hydrochloric acid Clean Air Act (CAA) 112 regulated toxic substances: trichloromethane; Hydrochloric acid
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Listed
Clean Air Act Section 602 Class I Substances	Not listed
Clean Air Act Section 602 Class II Substances	Not listed
DEA List I Chemicals (Precursor Chemicals)	Not listed
DEA List II Chemicals (Essential Chemicals)	Listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
trichloromethane	<5	Yes.	10000	803.8	10	0.8
Hydrochloric acid	<5	Yes.	500	50.8	5000	508.2



SARA 304 RQ 202 lbs / 91.7 kg**SARA 311/312**

Classification

FLAMMABLE LIQUIDS - Category 3
 ACUTE TOXICITY (inhalation) - Category 4
 EYE IRRITATION - Category 2A
 CARCINOGENICITY - Category 2
 TOXIC TO REPRODUCTION - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Composition/information on ingredients

Name	%	Classification
acetone	40 - 100	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
chloroform	<5	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 TOXIC TO REPRODUCTION - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
hydrochloric acid	<5	ACUTE TOXICITY (inhalation) - Category 3 SKIN CORROSION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
pentanol isomers	<5	FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
propan-2-ol	<5	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	trichloromethane	67-66-3	<5
	Hydrochloric acid	7647-01-0	<5
Supplier notification	trichloromethane	67-66-3	<5
	Hydrochloric acid	7647-01-0	<5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts	The following components are listed: ACETONE; CHLOROFORM; HYDROGEN CHLORIDE; ISOAMYL ALCOHOL; ISOPROPYL ALCOHOL
New York	The following components are listed: Acetone; Chloroform; Hydrochloric acid
New Jersey	The following components are listed: ACETONE; CHLOROFORM; HYDROGEN CHLORIDE; Isoamyl Alcohol; ISOPROPYL ALCOHOL
Pennsylvania	The following components are listed: 2-PROPANONE; METHANE, TRICHLORO-; HYDROCHLORIC ACID; 1-BUTANOL, 3-METHYL-; 2-PROPANOL

California Prop. 65

WARNING: This product can expose you to Chloroform, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Chloroform	Yes.	-

International regulations**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.



Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

United States All components are active or exempted.
Canada inventory All components are listed or exempted.

Section 16. Other information**National Fire Protection Association (U.S.A.)****Procedure used to derive the classification**

Classification	Justification
FLAMMABLE LIQUIDS - Category 3	On basis of test data
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
EYE IRRITATION - Category 2A	Calculation method
CARCINOGENICITY - Category 2	Calculation method
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

History

Date of printing 3/3/2023
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Date of previous issue 6/16/2020
Version 9
 sds_author@cytiva.com

Key to abbreviations

ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 N/A = Not available
 UN = United Nations
 Not available.

References

▣ Indicates information that has changed from previously issued version.

Notice to reader

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