Conforms to US OSHA Hazard Communication 29CFR1910.1200

SAFETY DATA SHEET

Orcein 1 percent

Section 1. Identification

1.1 Product identifier

Product name : Orcein 1 percent

Part no. : AR313

Validation date : 2/17/2025

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

Identified uses : Laboratory use
Container type: Dispenser Pack
AR313 // Orcein 1% // Artisan Orcein Stain Kit // 65 mL
Reference number: SDS296

1.3 Details of the supplier of the safety data sheet

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
Tel: +1 800 227 9770

Agilent Technologies Singapore (International) Pte Ltd.
No. 1 Yishun Avenue 7
Singapore, 768923
Tel. (65) 6276 2622

Agilent Technologies Denmark ApS
Produktionsvej 42
2600 Glostrup,
Denmark
Tel. +45 44 85 95 00

www.Agilent.com

e-mail address of person responsible for this SDS : SDS@Agilent.com

1.4 Emergency telephone number

In case of emergency : CHEMTREC®: 1-800-424-9300

Section 2. Hazards identification

2.1 Classification of the substance or mixture

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

Classification of the substance or mixture

H225	FLAMMABLE LIQUIDS - Category 2
H290	CORROSIVE TO METALS - Category 1
H315	SKIN IRRITATION - Category 2
H318	SERIOUS EYE DAMAGE - Category 1
H371	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.1%

2.2 GHS label elements

Section 2. Hazards identification

Hazard pictograms :

Signal word : Danger

Hazard statements :
H225 - Highly flammable liquid and vapor.
H290 - May be corrosive to metals.
H315 - Causes skin irritation.
H318 - Causes serious eye damage.
H371 - May cause damage to organs.

Precautionary statements

Prevention :
P280 - Wear protective gloves. Wear eye or face protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P234 - Keep only in original packaging.
P233 - Keep container tightly closed.
P260 - Do not breathe vapor.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash thoroughly after handling.

Response :
P390 - Absorb spillage to prevent material damage.
P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage : P403 + P235 - Store in a well-ventilated place. Keep cool.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3 Other hazards

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	Identifiers
Ethanol	≥50 - ≤75	CAS: 64-17-5
Propan-2-ol	≤4.5	CAS: 67-63-0
Methanol	≤4.5	CAS: 67-56-1
Hydrochloric acid	≤3	CAS: 7647-01-0
Orcein	≤1.6	CAS: 1400-62-0

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

4.1 Description of necessary first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. 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. 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 : Get medical attention immediately. Call a poison center or physician. Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a 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.

4.2 Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause damage to organs following a single exposure if inhaled.

Skin contact : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation.

Ingestion : May cause damage to organs following a single exposure if swallowed.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

4.3 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.

Section 4. First aid measures

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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards arising from the chemical : Highly 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.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
Formaldehyde.

5.3 Advice for firefighters

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.

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.

Section 6. Accidental release measures

6.1 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. Do not breathe 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".

6.2 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).

6.3 Methods and materials for containment and cleaning up

Section 6. Accidental release measures

Methods for cleaning up : 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. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. 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. Absorb spillage to prevent material damage.

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.

7.2 Conditions for safe storage, including any incompatibilities : Specific storage conditions: Please consult the label.
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 in a corrosion resistant container with a resistant inner liner. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep away from metals. 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.

7.3 Specific end use(s)

Recommendations : Industrial applications, Professional applications.

Industrial sector specific solutions : Not available.

Section 8. Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Ethanol	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 1000 ppm. TWA 10 hours: 1900 mg/m³. **CAL OSHA PEL (United States, 5/2018)** TWA 8 hours: 1900 mg/m³. TWA 8 hours: 1000 ppm. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 1000 ppm. TWA 8 hours: 1900 mg/m³. **OSHA PEL 1989 (United States, 3/1989)**

Section 8. Exposure controls/personal protection

	TWA 8 hours: 1000 ppm. TWA 8 hours: 1900 mg/m³. **ACGIH TLV (United States, 1/2024)** A3. STEL 15 minutes: 1000 ppm.
Propan-2-ol	**NIOSH REL (United States, 10/2020)** TWA 10 hours: 400 ppm. TWA 10 hours: 980 mg/m³. STEL 15 minutes: 500 ppm. STEL 15 minutes: 1225 mg/m³. **CAL OSHA PEL (United States, 5/2018)** STEL 15 minutes: 1225 mg/m³. STEL 15 minutes: 500 ppm. TWA 8 hours: 980 mg/m³. TWA 8 hours: 400 ppm. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 400 ppm. TWA 8 hours: 980 mg/m³. **OSHA PEL 1989 (United States, 3/1989)** TWA 8 hours: 400 ppm. TWA 8 hours: 980 mg/m³. STEL 15 minutes: 500 ppm. STEL 15 minutes: 1225 mg/m³. **ACGIH TLV (United States, 1/2024)** A4. TWA 8 hours: 200 ppm. STEL 15 minutes: 400 ppm.
Methanol	**NIOSH REL (United States, 10/2020)** Absorbed through skin. TWA 10 hours: 200 ppm. TWA 10 hours: 260 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 325 mg/m³. **CAL OSHA PEL (United States, 5/2018)** Absorbed through skin. STEL 15 minutes: 325 mg/m³. STEL 15 minutes: 250 ppm. C: 1000 ppm. TWA 8 hours: 260 mg/m³. TWA 8 hours: 200 ppm. **OSHA PEL (United States, 5/2018)** TWA 8 hours: 200 ppm. TWA 8 hours: 260 mg/m³. **OSHA PEL 1989 (United States, 3/1989)** Absorbed through skin. TWA 8 hours: 200 ppm. TWA 8 hours: 260 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 325 mg/m³. **ACGIH TLV (United States, 1/2024)** Absorbed through skin. TWA 8 hours: 200 ppm. TWA 8 hours: 262 mg/m³. STEL 15 minutes: 250 ppm. STEL 15 minutes: 328 mg/m³.
Hydrochloric acid	**NIOSH REL (United States, 10/2020)** CEIL: 5 ppm. CEIL: 7 mg/m³. **CAL OSHA PEL (United States, 5/2018)** C: 2 ppm.

Section 8. Exposure controls/personal protection

	TWA 8 hours: 0.45 mg/m³. TWA 8 hours: 0.3 ppm. **OSHA PEL (United States, 5/2018)** CEIL: 5 ppm. CEIL: 7 mg/m³. **OSHA PEL 1989 (United States, 3/1989)** CEIL: 5 ppm. CEIL: 7 mg/m³. **ACGIH TLV (United States, 1/2024)** A4. C: 2 ppm.
Orcein	None.

Biological exposure indices

Ingredient name	Exposure indices
Propan-2-ol	**ACGIH BEI (United States, 1/2024)** BEI: 40 mg/l, acetone [in urine]. Sampling time: end of shift at end of workweek.
Methanol	**ACGIH BEI (United States, 1/2024)** BEI: 15 mg/l, methanol [in urine]. Sampling time: end of shift.

8.2 Exposure controls

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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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.

Section 8. Exposure controls/personal protection

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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Liquid.

Color : Red. [Dark]

Odor : Alcohol-like.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Boiling point or initial boiling point and boiling range : Not available.

Flash point : Closed cup: 21°C (69.8°F)

Evaporation rate : Not available.

Flammability : Not applicable.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Methanol	126.96329	16.9	-	-	-	-
Ethanol	42.94865	5.7	-	-	-	-

Relative vapor density : Not available.

Relative density : <1

Density : <1 g/cm³ [20°C (68°F)]

Solubility(ies) :

Media	Result
water	Soluble

Miscible with water : Yes.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Ethanol	455	851	DIN 51794
Methanol	455	851	DIN 51794

Section 9. Physical and chemical properties and safety characteristics

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C (104°F)): Not available.

Particle characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 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.

10.5 Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials
metals

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	
Ethanol	Rat - Oral - LD50	7 g/kg
	Rat - Inhalation - LC50 Vapor	124700 mg/m³ [4 hours]
Propan-2-ol	Rabbit - Dermal - LD50	12800 mg/kg
	Rat - Oral - LD50	5000 mg/kg
Methanol	Rabbit - Dermal - LD50	15800 mg/kg
	Rat - Oral - LD50	5600 mg/kg
	Rat - Inhalation - LC50 Vapor	145000 ppm [1 hours]
	Rat - Inhalation - LC50 Vapor	64000 ppm [4 hours]
	Rat - Inhalation - LC50 Vapor	83.84 mg/l [4 hours]
	Rat - Inhalation - LC50 Vapor	189.95 mg/l [1 hours]

Conclusion/Summary [Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result	
Propan-2-ol	Rabbit - Skin - Mild irritant	-
Methanol	Rabbit - Skin - Moderate irritant	Duration of treatment/ exposure: 24 hours

Conclusion/Summary [Product] : Repeated exposure may cause skin dryness or cracking.

Ingredient name	Conclusion/Summary

Section 11. Toxicological information

Propan-2-ol	Repeated exposure may cause skin dryness or cracking.
Methanol	Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation

	Result	
Ethanol	Rabbit - Eyes - Mild irritant	Duration of treatment/ exposure: 24 hours
	Rabbit - Eyes - Moderate irritant	Duration of treatment/ exposure: 0.066666667 minutes
	Rabbit - Eyes - Moderate irritant	-
Propan-2-ol	Rabbit - Eyes - Moderate irritant	Duration of treatment/ exposure: 24 hours
	Rabbit - Eyes - Moderate irritant	-
Methanol	Rabbit - Eyes - Moderate irritant	Duration of treatment/ exposure: 24 hours
	Rabbit - Eyes - Moderate irritant	-
	Rabbit - Eyes - Severe irritant	-

Conclusion/Summary [Product] : May cause eye irritation.

Ingredient name	Conclusion/Summary
Methanol	May cause eye irritation.

Respiratory corrosion/irritation

Product/ingredient name

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Ethanol	-	1	-
Propan-2-ol	-	3	-
Hydrochloric acid	-	3	-

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary [Product] : Repeated or prolonged exposure to the substance can produce reproductive system damage.

Ingredient name	Conclusion/Summary
methanol	Repeated or prolonged exposure to the substance can produce reproductive system damage.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result
Propan-2-ol	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
Methanol	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
Hydrochloric acid	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May cause damage to organs following a single exposure if inhaled.

Skin contact : May cause damage to organs following a single exposure in contact with skin. Causes skin irritation.

Ingestion : May cause damage to organs following a single exposure if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

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

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Conclusion/Summary [Product] : Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

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)
Orcein 1 percent	2896.4	9491.5	N/A	94.9	N/A
Ethanol	7000	N/A	N/A	124.7	N/A
Propan-2-ol	5000	12800	N/A	72.2	N/A
Methanol	100	300	N/A	3	N/A
Orcein	500	N/A	N/A	N/A	N/A

Other information : Adverse symptoms may include the following: blurred or double vision, Eye contact can result in corneal damage or blindness. Repeated or prolonged exposure to the substance can produce liver damage. Narcotic effect. May cause nervous system disturbances.

Section 12. Ecological information

12.1 Toxicity

Product/ingredient name	Result	
Ethanol	Acute - LC50 - Marine water	11 g/l [96 hours]
	Chronic - NOEC - Marine water	4.995 mg/l [96 hours]
	Chronic - NOEC - Fresh water	100 µl/l [21 days]
	Acute - EC50 - Marine water	3306 mg/l [96 hours]
	Acute - EC50 - Fresh water	2 mg/l [48 hours]
Propan-2-ol	Acute - LC50 - Marine water	1400 mg/l [48 hours]
	Acute - LC50 - Fresh water	4200 mg/l [96 hours]
Methanol	Acute - LC50 - Marine water	2500 mg/l [48 hours]
	Acute - LC50 - Fresh water	290 mg/l [96 hours]
	Chronic - NOEC - Marine water	9.96 mg/l [96 hours]
	Acute - EC50 - Marine water	2736 mg/l [96 hours]
Hydrochloric acid	Acute - LC50 - Marine water	240 mg/l [48 hours]
	Acute - LC50 - Fresh water	282 ppm [96 hours]

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Conclusion/Summary [Product] : Not available.

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Ethanol	-	-	Readily
Propan-2-ol	-	-	Readily
Methanol	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Ethanol	-0.35	0.5	Low
Propan-2-ol	0.05	-	Low
Methanol	-0.77	<10	Low

12.4 Mobility in soil

Soil/Water partition coefficient : Not available.

12.5 Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

13.1 Waste treatment methods

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.

RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Methanol (I)	67-56-1	Listed	U154

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN2924	UN2924	UN2924	UN2924	UN2924
UN proper shipping name	Flammable liquids, corrosive, n.o.s. (Ethanol, Propan-2-ol, Methanol) (Ethanol, Propan-2-ol, Methanol)	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)	LIQUIDO INFLAMABLE, CORROSIVO, N.E.P. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)	Flammable liquid, corrosive, n.o.s. (Ethanol, Propan-2-ol, Methanol, Hydrochloric acid)
Transport hazard class(es)	3 (8) 	3 (8) 	3 (8) 	3 (8) 	3 (8) 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

Additional information

If shipped as part of a kit "UN3316 (Chemical kit), Class 9, PG II" can be used. Precondition: UN3316 must be allowed for the remaining vials in same kit too.

DOT Classification : **Limited quantity** Yes.
Packaging instruction Exceptions: 150. Non-bulk: 202. Bulk: 243.
Quantity limitation Passenger aircraft/rail: 1 L. Cargo aircraft: 5 L.
Special provisions IB2, T11, TP2, TP27

TDG Classification : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3), 2.40-2.42 (Class 8).
Explosive Limit and Limited Quantity Index 1
Passenger Carrying Road or Rail Index 1
Special provisions 16

Mexico Classification : **Special provisions** 274

IMDG : **Emergency schedules** F-E, S-C
Special provisions 274

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 1 L. Packaging instructions: 352. Cargo Aircraft Only: 5 L. Packaging instructions: 363. Limited Quantities - Passenger Aircraft: 0.5 L. Packaging instructions: Y340.
Special provisions A3, A803

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.

Section 15. Regulatory information

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

U.S. Federal regulations : **Clean Water Act (CWA) 311**: Hydrochloric acid

Clean Air Act (CAA) 112 regulated toxic substances: Hydrochloric acid

TSCA 12(b) - Chemical export notification

Not applicable.

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) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Hydrochloric acid	≤3	Yes.	500	-	5000	-

SARA 304 RQ : 370678 lbs / 168287.8 kg [49396.6 gal / 186986.4 L]

SARA 311/312

Classification : FLAMMABLE LIQUIDS - Category 2
CORROSIVE TO METALS - Category 1
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2

Composition/information on ingredients

Name	%	Classification
Ethanol	≥50 - ≤75	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A HNOC - Defatting irritant
Propan-2-ol	≤4.5	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 HNOC - Defatting irritant
Methanol	≤4.5	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 1
Hydrochloric acid	≤3	CORROSIVE TO METALS - Category 1 SKIN CORROSION - Category 1A SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 HNOC - Corrosive to digestive tract
Orcein	≤1.6	ACUTE TOXICITY (oral) - Category 4

SARA 313

Section 15. Regulatory information

	Product name	CAS number	%
Form R - Reporting requirements	Methanol Hydrochloric acid	67-56-1 7647-01-0	≤4.5 ≤3
Supplier notification	Methanol Hydrochloric acid	67-56-1 7647-01-0	≤4.5 ≤3

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: ETHYL ALCOHOL; ISOPROPYL ALCOHOL; METHANOL; HYDROGEN CHLORIDE

New York : The following components are listed: Methanol; Hydrochloric acid

New Jersey : The following components are listed: ETHYL ALCOHOL; ISOPROPYL ALCOHOL; METHYL ALCOHOL; HYDROGEN CHLORIDE

Pennsylvania : The following components are listed: ETHANOL; 2-PROPANOL; METHANOL; HYDROCHLORIC ACID

California Prop. 65

⚠ **WARNING**: This product can expose you to Methanol, which is known to the State of California to cause 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
Methanol	-	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

Australia : All components are listed or exempted.

Canada : All components are listed or exempted.

China : All components are listed or exempted.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : Not determined.

Taiwan : All components are listed or exempted.

Thailand : Not determined.

Turkey : Not determined.

Section 15. Regulatory information

United States : All components are active or exempted.

Viet Nam : All components are listed or exempted.

Section 16. Other information

Procedure used to derive the classification

Classification	Justification
FLAMMABLE LIQUIDS - Category 2	On basis of test data
CORROSIVE TO METALS - Category 1	Calculation method
SKIN IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) - Category 2	Calculation method

History

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Version : 6

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
DOT = Department of Transportation
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
IMO = International Maritime Organization
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
SGG = Segregation Group
TDG = Transportation of Dangerous Goods
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

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