





## Section 2. Hazards identification

<b>Hazard pictograms</b>	: ES/APCI Positive Ion Performance Standard	
	Electrospray Calibrant Solution	
<b>Signal word</b>	: ES/APCI Positive Ion Performance Standard	Danger
	Electrospray Calibrant Solution	Danger
<b>Hazard statements</b>	: ES/APCI Positive Ion Performance Standard	H225 - Highly flammable liquid and vapor. H319 - Causes serious eye irritation. H336 - May cause drowsiness or dizziness. H373 - May cause damage to organs through prolonged or repeated exposure. (liver)
	Electrospray Calibrant Solution	H225 - Highly flammable liquid and vapor. H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled. H319 - Causes serious eye irritation. H373 - May cause damage to organs through prolonged or repeated exposure. (blood system, central nervous system (CNS), kidneys, liver)
<b><u>Precautionary statements</u></b>		
<b>Prevention</b>	: ES/APCI Positive Ion Performance Standard	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, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P264 - Wash hands thoroughly after handling.
	Electrospray Calibrant Solution	P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P233 - Keep container tightly closed. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P270 - Do not eat, drink or smoke when using this product.

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<b>Response</b>	:  ES/APCI Positive Ion Performance Standard	P264 - Wash hands thoroughly after handling.
		P314 - Get medical attention if you feel unwell.
	Electrospray Calibrant Solution	P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
		P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	Electrospray Calibrant Solution	P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		P337 + P313 - If eye irritation persists: Get medical attention.
	Electrospray Calibrant Solution	P314 - Get medical attention if you feel unwell.
		P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
	Electrospray Calibrant Solution	P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
		P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	Electrospray Calibrant Solution	P302 + P352 + P312 + P362+P364 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell. Take off contaminated clothing and wash it before reuse.
		P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	Electrospray Calibrant Solution	P337 + P313 - If eye irritation persists: Get medical attention.
<b>Storage</b>	:  ES/APCI Positive Ion Performance Standard	P405 - Store locked up.
	Electrospray Calibrant Solution	P403 - Store in a well-ventilated place.
		P235 - Keep cool.
	Electrospray Calibrant Solution	P403 - Store in a well-ventilated place.
		P235 - Keep cool.
<b>Disposal</b>	:  ES/APCI Positive Ion Performance Standard	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	Electrospray Calibrant Solution	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Supplemental label elements</b>	:  ES/APCI Positive Ion Performance Standard	None known.
	Electrospray Calibrant Solution	None known.
<b>2.3 Other hazards</b>	:  ES/APCI Positive Ion Performance Standard	None known.
<b>Hazards not otherwise classified</b>	:  ES/APCI Positive Ion Performance Standard	None known.
	Electrospray Calibrant Solution	None known.

## Section 3. Composition/information on ingredients

<b>Substance/mixture</b>	: ES/APCI Positive Ion Performance Standard	Mixture
	Electrospray Calibrant Solution	Mixture

Ingredient name	%	CAS number
ES/APCI Positive Ion Performance Standard Propan-2-ol	≥50 - ≤75	67-63-0
Electrospray Calibrant Solution Acetonitrile	≥90	75-05-8

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 as hazardous to health or the environment 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

<b>Eye contact</b>	: ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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.
<b>Inhalation</b>	: ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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 following exposure or if feeling unwell. If necessary, call a poison center or physician. If unconscious, place

## Section 4. First aid measures

		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.
<b>Skin contact</b>	:  ES/APCI Positive Ion Performance Standard	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
	Electrospray Calibrant Solution	Wash with plenty of 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. Get medical attention following exposure or if feeling unwell. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
<b>Ingestion</b>	:  ES/APCI Positive Ion Performance Standard	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.
	Electrospray Calibrant Solution	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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.

### 4.2 Most important symptoms/effects, acute and delayed

#### Potential acute health effects

## Section 4. First aid measures

<b>Eye contact</b>	: ES/APCI Positive Ion Performance Standard	Causes serious eye irritation.
	Electrospray Calibrant Solution	Causes serious eye irritation.
<b>Inhalation</b>	: ES/APCI Positive Ion Performance Standard	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
	Electrospray Calibrant Solution	Harmful if inhaled.
<b>Skin contact</b>	: ES/APCI Positive Ion Performance Standard	No known significant effects or critical hazards.
	Electrospray Calibrant Solution	Harmful in contact with skin.
<b>Ingestion</b>	: ES/APCI Positive Ion Performance Standard	Can cause central nervous system (CNS) depression.
	Electrospray Calibrant Solution	Harmful if swallowed.

### Over-exposure signs/symptoms

<b>Eye contact</b>	: ES/APCI Positive Ion Performance Standard	Adverse symptoms may include the following: pain or irritation watering redness
	Electrospray Calibrant Solution	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: ES/APCI Positive Ion Performance Standard	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Electrospray Calibrant Solution	No specific data.
<b>Skin contact</b>	: ES/APCI Positive Ion Performance Standard	No specific data.
	Electrospray Calibrant Solution	No specific data.
<b>Ingestion</b>	: ES/APCI Positive Ion Performance Standard	No specific data.
	Electrospray Calibrant Solution	No specific data.

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

<b>Notes to physician</b>	: ES/APCI Positive Ion Performance Standard	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	Electrospray Calibrant Solution	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.
<b>Specific treatments</b>	: ES/APCI Positive Ion Performance Standard	No specific treatment.
	Electrospray Calibrant Solution	No specific treatment.
<b>Protection of first-aiders</b>	: ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	No action shall be taken involving any personal risk

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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

<b>Suitable extinguishing media</b>	: ES/APCI Positive Ion Performance Standard	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
	Electrospray Calibrant Solution	Use dry chemical, CO <sub>2</sub> , water spray (fog) or foam.
<b>Unsuitable extinguishing media</b>	: ES/APCI Positive Ion Performance Standard	Do not use water jet.
	Electrospray Calibrant Solution	Do not use water jet.


### 5.2 Special hazards arising from the substance or mixture

<b>Specific hazards arising from the chemical</b>	: ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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.
<b>Hazardous thermal decomposition products</b>	: ES/APCI Positive Ion Performance Standard	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	Electrospray Calibrant Solution	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides cyanides

### 5.3 Advice for firefighters

<b>Special protective actions for fire-fighters</b>	: ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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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<b>Special protective equipment for fire-fighters</b>	:  ES/APCI Positive Ion Performance Standard	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
	Electrospray Calibrant Solution	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

<b>For non-emergency personnel</b>	:  ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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.
<b>For emergency responders</b>	:  ES/APCI Positive Ion Performance Standard	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".
	Electrospray Calibrant Solution	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".
<b>6.2 Environmental precautions</b>	:  ES/APCI Positive Ion Performance Standard	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).
	Electrospray Calibrant Solution	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


<b>Methods for cleaning up</b>	:  ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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.

## Section 7. Handling and storage

### 7.1 Precautions for safe handling

<b>Protective measures</b>	:  ES/APCI Positive Ion Performance Standard	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.
	Electrospray Calibrant Solution	Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. 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.

## Section 7. Handling and storage

<b>Advice on general occupational hygiene</b>	:  ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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.
<b>7.2 Conditions for safe storage, including any incompatibilities</b>	:  ES/APCI Positive Ion Performance Standard	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.
	Electrospray Calibrant Solution	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. 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.
<b>7.3 Specific end use(s)</b>		
<b>Recommendations</b>	:  ES/APCI Positive Ion Performance Standard	Industrial applications, Professional applications.
	Electrospray Calibrant Solution	Industrial applications, Professional applications.
<b>Industrial sector specific solutions</b>	:  ES/APCI Positive Ion Performance Standard	Not applicable.
	Electrospray Calibrant Solution	Not applicable.

## Section 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
<b>ES/APCI Positive Ion Performance Standard</b> Propan-2-ol	<b>ACGIH TLV (United States, 3/2017).</b> TWA: 200 ppm 8 hours. STEL: 400 ppm 15 minutes. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 400 ppm 8 hours. TWA: 980 mg/m <sup>3</sup> 8 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m <sup>3</sup> 15 minutes. <b>NIOSH REL (United States, 10/2016).</b> TWA: 400 ppm 10 hours. TWA: 980 mg/m <sup>3</sup> 10 hours. STEL: 500 ppm 15 minutes. STEL: 1225 mg/m <sup>3</sup> 15 minutes. <b>OSHA PEL (United States, 6/2016).</b> TWA: 400 ppm 8 hours. TWA: 980 mg/m <sup>3</sup> 8 hours.
<b>Electrospray Calibrant Solution</b> Acetonitrile	<b>ACGIH TLV (United States, 3/2017).</b> <b>Absorbed through skin.</b> TWA: 20 ppm 8 hours. <b>OSHA PEL 1989 (United States, 3/1989).</b> TWA: 40 ppm 8 hours. TWA: 70 mg/m <sup>3</sup> 8 hours. STEL: 60 ppm 15 minutes. STEL: 105 mg/m <sup>3</sup> 15 minutes. <b>NIOSH REL (United States, 10/2016).</b> TWA: 20 ppm 10 hours. TWA: 34 mg/m <sup>3</sup> 10 hours. <b>OSHA PEL (United States, 6/2016).</b> TWA: 40 ppm 8 hours. TWA: 70 mg/m <sup>3</sup> 8 hours.

### 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.

#### 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.

## Section 8. Exposure controls/personal protection

- 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.
- 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

### 9.1 Information on basic physical and chemical properties

#### Appearance

- Physical state** : ES/APCI Positive Ion Performance Liquid.  
Standard Electropray Calibrant Solution Liquid.
- Color** : ES/APCI Positive Ion Performance Colorless.  
Standard Electropray Calibrant Solution Not available.
- Odor** : ES/APCI Positive Ion Performance Not available.  
Standard Electropray Calibrant Solution Not available.
- Odor threshold** : ES/APCI Positive Ion Performance Not available.  
Standard Electropray Calibrant Solution Not available.
- pH** : ES/APCI Positive Ion Performance Not available.  
Standard Electropray Calibrant Solution Not available.
- Melting point** : ES/APCI Positive Ion Performance Not available.  
Standard Electropray Calibrant Solution Not available.
- Boiling point** : ES/APCI Positive Ion Performance Not available.  
Standard Electropray Calibrant Solution 81.7°C (179.1°F)
- Flash point** : ES/APCI Positive Ion Performance Closed cup: -18 to 23°C (-0.4 to 73.4°F)  
Standard Electropray Calibrant Solution Closed cup: -18 to 23°C (-0.4 to 73.4°F)
- Evaporation rate** : ES/APCI Positive Ion Performance Not available.  
Standard Electropray Calibrant Solution Not available.

## Section 9. Physical and chemical properties

<b>Flammability (solid, gas)</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not applicable. Electrospray Calibrant Solution Not applicable.
<b>Lower and upper explosive (flammable) limits</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Vapor pressure</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Vapor density</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Relative density</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Solubility</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Soluble in the following materials: cold water and hot water. Electrospray Calibrant Solution Soluble in the following materials: cold water and hot water.
<b>Partition coefficient: n-octanol/water</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Auto-ignition temperature</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Decomposition temperature</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.
<b>Viscosity</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Not available. Electrospray Calibrant Solution Not available.

## Section 10. Stability and reactivity

<b>10.1 Reactivity</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No specific test data related to reactivity available for this product or its ingredients. Electrospray Calibrant Solution No specific test data related to reactivity available for this product or its ingredients.
<b>10.2 Chemical stability</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	The product is stable. Electrospray Calibrant Solution The product is stable.
<b>10.3 Possibility of hazardous reactions</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Under normal conditions of storage and use, hazardous reactions will not occur. Electrospray Calibrant Solution Under normal conditions of storage and use, hazardous reactions will not occur.
<b>10.4 Conditions to avoid</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	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. Electrospray Calibrant Solution 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

## Section 10. Stability and reactivity

of ignition.

**10.5 Incompatible materials** : **ES/APCI Positive Ion Performance Standard** Reactive or incompatible with the following materials:  
oxidizing materials

**Electrospray Calibrant Solution** Reactive or incompatible with the following materials:  
oxidizing materials

**10.6 Hazardous decomposition products** : **ES/APCI Positive Ion Performance Standard** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Electrospray Calibrant Solution** 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	Species	Dose	Exposure
<b>ES/APCI Positive Ion Performance Standard</b> Propan-2-ol	LD50 Dermal LD50 Oral	Rabbit Rat	12800 mg/kg 5000 mg/kg	- -
<b>Electrospray Calibrant Solution</b> Acetonitrile	LC50 Inhalation Vapor LD50 Oral	Rat Rat	17100 ppm 2460 mg/kg	4 hours -

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
<b>ES/APCI Positive Ion Performance Standard</b> Propan-2-ol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams 10 milligrams 500 milligrams	-
	Eyes - Moderate irritant	Rabbit	-		-
	Skin - Mild irritant	Rabbit	-		-
<b>Electrospray Calibrant Solution</b> Acetonitrile	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters 500 milligrams	-
	Skin - Mild irritant	Rabbit	-		-

#### Sensitization

Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

## Section 11. Toxicological information

### Classification

Product/ingredient name	OSHA	IARC	NTP
ES/APCI Positive Ion Performance Standard Propan-2-ol	-	3	-

### Reproductive toxicity

**Conclusion/Summary** : Not available.

### Teratogenicity

**Conclusion/Summary** : Not available.

### Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
ES/APCI Positive Ion Performance Standard Propan-2-ol	Category 3	Not applicable.	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
ES/APCI Positive Ion Performance Standard Propan-2-ol	Category 2	Not determined	liver
Electrospray Calibrant Solution Acetonitrile	Category 2	Not determined	blood system, central nervous system (CNS), kidneys and liver

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : ES/APCI Positive Ion Performance Standard Routes of entry anticipated: Oral, Dermal, Inhalation.  
Electrospray Calibrant Solution Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

**Eye contact** : ES/APCI Positive Ion Performance Standard Causes serious eye irritation.  
Electrospray Calibrant Solution Causes serious eye irritation.

**Inhalation** : ES/APCI Positive Ion Performance Standard Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.  
Electrospray Calibrant Solution Harmful if inhaled.

**Skin contact** : ES/APCI Positive Ion Performance Standard No known significant effects or critical hazards.  
Electrospray Calibrant Solution Harmful in contact with skin.

**Ingestion** : ES/APCI Positive Ion Performance Standard Can cause central nervous system (CNS) depression.  
Electrospray Calibrant Solution Harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

## Section 11. Toxicological information

<b>Eye contact</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Adverse symptoms may include the following: pain or irritation watering redness
	Electrospray Calibrant Solution	Adverse symptoms may include the following: pain or irritation watering redness
<b>Inhalation</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	Electrospray Calibrant Solution	No specific data.
<b>Skin contact</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No specific data.
	Electrospray Calibrant Solution	No specific data.
<b>Ingestion</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No specific data.
	Electrospray Calibrant Solution	No specific data.

### 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

<b>General</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	May cause damage to organs through prolonged or repeated exposure.
	Electrospray Calibrant Solution	May cause damage to organs through prolonged or repeated exposure.
<b>Carcinogenicity</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No known significant effects or critical hazards.
	Electrospray Calibrant Solution	No known significant effects or critical hazards.
<b>Mutagenicity</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No known significant effects or critical hazards.
	Electrospray Calibrant Solution	No known significant effects or critical hazards.
<b>Teratogenicity</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No known significant effects or critical hazards.
	Electrospray Calibrant Solution	No known significant effects or critical hazards.
<b>Developmental effects</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No known significant effects or critical hazards.
	Electrospray Calibrant Solution	No known significant effects or critical hazards.
<b>Fertility effects</b>	: <b>ES/APCI Positive Ion Performance Standard</b>	No known significant effects or critical hazards.
	Electrospray Calibrant Solution	No known significant effects or critical hazards.



## Section 11. Toxicological information

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
<b>ES/APCI Positive Ion Performance Standard</b> Oral	10000 mg/kg
<b>Electrospray Calibrant Solution</b> Oral	526.3 mg/kg
Dermal	1157.9 mg/kg
Inhalation (vapors)	11.58 mg/l

#### Other information

: <b>ES/APCI Positive Ion Performance Standard</b>	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
Electrospray Calibrant Solution	Adverse symptoms may include the following: May cause headache, weakness, dizziness, shortness of breath, cyanosis, rapid heart beat, unconsciousness and possible death.

## Section 12. Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
<b>ES/APCI Positive Ion Performance Standard</b> Propan-2-ol	Acute EC50 10100 mg/l Fresh water Acute LC50 1400000 µg/l Marine water Acute LC50 4200 mg/l Fresh water	Daphnia - Daphnia magna Crustaceans - Crangon crangon Fish - Rasbora heteromorpha	48 hours 48 hours 96 hours
<b>Electrospray Calibrant Solution</b> Acetonitrile	Acute IC50 3685000 µg/l Fresh water Acute LC50 3600000 µg/l Fresh water Acute LC50 1000000 µg/l Fresh water Chronic NOEC 1000000 µg/l Fresh water Chronic NOEC 160000 µg/l Fresh water	Aquatic plants - Lemna minor Daphnia - Daphnia magna Fish - Pimephales promelas Aquatic plants - Lemna minor Daphnia - Daphnia magna	96 hours 48 hours 96 hours 96 hours 21 days

### 12.2 Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<b>ES/APCI Positive Ion Performance Standard</b> Propan-2-ol	-	-	Readily
<b>Electrospray Calibrant Solution</b> Acetonitrile	-	-	Readily

### 12.3 Bioaccumulative potential

## Section 12. Ecological information

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
ES/APCI Positive Ion Performance Standard Propan-2-ol	0.05	-	low
Electrospray Calibrant Solution Acetonitrile	-0.34	3	low

### 12.4 Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : 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. 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
Electrospray Calibrant Solution Acetonitrile (I,T)	75-05-8	Listed	U003

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	UN3316	UN3316	UN3316	UN3316	UN3316
UN proper shipping name	Chemical kits	CHEMICAL KIT	EQUIPO QUIMICO	CHEMICAL KIT	Chemical kit
Transport hazard class(es)	9 	9 	9 	9 	9 
Packing group	II	II	II	II	II
Environmental hazards	No.	No.	No.	No.	No.

### Additional information

#### DOT Classification

: **Reportable quantity** 10526.3 lbs / 4778.9 kg. The classification of the product is due solely to the presence of one or more US DOT-listed 'Hazardous substances' that are subject to reportable quantity requirements and only applies to shipments of packages greater than, or equal to, the product reportable quantity. Package sizes less than the product reportable quantity are not regulated as hazardous materials.

**Limited quantity** Yes.

**Packaging instruction** Exceptions: 161. Non-bulk: 161. Bulk: None.

**Quantity limitation** Passenger aircraft/rail: 10 kg. Cargo aircraft: 10 kg.

**Special provisions** 15

#### TDG Classification

: Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9).

#### Mexico Classification

: **Special provisions** 251, 340

#### IMDG

: **Emergency schedules** F-A, \_S-P\_

**Special provisions** 251, 340

#### IATA

: **Quantity limitation** Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.

**Special provisions** A44, A163

#### 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 Annex II of MARPOL and the IBC Code** : Not available.

## Section 15. Regulatory information

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

#### U.S. Federal regulations

: **TSCA 5(a)2 final significant new use rules:** reserpine

**TSCA 8(a) PAIR:** Acetonitrile

**TSCA 8(a) CDR Exempt/Partial exemption:** Not determined

**Clean Water Act (CWA) 307:** Acetonitrile

## Section 15. Regulatory information

**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

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : **ES/APCI Positive Ion Performance Standard** FLAMMABLE LIQUIDS - Category 2

Electrospray Calibrant Solution

EYE IRRITATION - Category 2A  
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2  
 FLAMMABLE LIQUIDS - Category 2  
 ACUTE TOXICITY (oral) - Category 4  
 ACUTE TOXICITY (dermal) - Category 4  
 ACUTE TOXICITY (inhalation) - Category 4  
 EYE IRRITATION - Category 2A  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), kidneys, liver) - Category 2

#### Composition/information on ingredients

Name	%	Classification
<b>ES/APCI Positive Ion Performance Standard</b> Propan-2-ol	≥50 - ≤75	FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2 HNOC - Defatting irritant
<b>Electrospray Calibrant Solution</b> Acetonitrile	≥90	FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), kidneys, liver) - Category 2

### SARA 313

## Section 15. Regulatory information


	Product name	CAS number	%
Form R - Reporting requirements	Electrospray Calibrant Solution Acetonitrile	75-05-8	≥90
Supplier notification	Electrospray Calibrant Solution Acetonitrile	75-05-8	≥90

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: ISOPROPYL ALCOHOL; 2-PROPANOL; ACETONITRILE
- New York** : The following components are listed: Acetonitrile; Ethanenitrile
- New Jersey** : The following components are listed: ISOPROPYL ALCOHOL; 2-PROPANOL; ACETONITRILE; CYANOMETHANE
- Pennsylvania** : The following components are listed: 2-PROPANOL; ACETONITRILE

### California Prop. 65

 **WARNING:** This product can expose you to Reserpine, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Ingredient name	No significant risk level	Maximum acceptable dosage level
ES/APCI Positive Ion Performance Standard Reserpine	Yes.	-

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

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** : Not determined.
- Canada** : Not determined.
- China** : Not determined.
- Europe** : Not determined.
- Japan** : **Japan inventory (ENCS):** Not determined.  
**Japan inventory (ISHL):** Not determined.
- Malaysia** : Not determined.
- New Zealand** : Not determined.
- Philippines** : Not determined.
- Republic of Korea** : Not determined.

## Section 15. Regulatory information

<b>Taiwan</b>	: <input checked="" type="checkbox"/> All components are listed or exempted.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>United States</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

### History

<b>Date of issue</b>	: 08/23/2018
<b>Date of previous issue</b>	: 09/06/2017
<b>Version</b>	: 5

### Procedure used to derive the classification

Classification	Justification
<b><input checked="" type="checkbox"/> ES/APCI Positive Ion Performance Standard</b> FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (liver) - Category 2	On basis of test data Calculation method Calculation method Calculation method
<b>Electrospray Calibrant Solution</b> FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, central nervous system (CNS), kidneys, liver) - Category 2	Expert judgment Calculation method Calculation method Calculation method Calculation method Calculation method

Indicates information that has changed from previously issued version.

### Notice to reader

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