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MATERIAL SAFETY DATA SHEET — 16 Sections

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier Extraction Solution		[WHMIS Classification]	
Product Use C-CL-2012, C-CL-2096, C-CL-2054			
Manufacturer's Name James Instruments, Inc.		Supplier's Name Acetic Acid, Glacial - Avantor Performance Materials, Inc.	
Street Address 3727 N Kedzie Ave.		Street Address 3477 Corporate Parkway, Suite 200	
City Chicago		State IL	City Center Valley
Postal Code 60618		Emergency Telephone 800-424-9300	State PA
Postal Code 60618		Emergency Telephone 800-424-9300	Emergency Telephone 855-282-6867
Date MSDS Prepared March 21, 2019		MSDS Prepared By James Instruments, Inc.	Phone Number 1-773-463-6565

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients (<i>specific</i>)	%	CAS Number	LD ₅₀ of Ingredient (<i>specify species and route</i>)	LC ₅₀ of Ingredient (<i>specify species</i>)
Acetic Acid, Glacial (Vinegar)	8-10	64-19-7	N/A	N/A
Isopropyl Alcohol	5	64-19-7	N/A	N/A
Distilled Water (H ₂ O)	85-87	7732-18-5	N/A	N/A

SECTION 3 — HAZARDS IDENTIFICATION

Route of Entry	<input checked="" type="checkbox"/> Skin Contact	<input checked="" type="checkbox"/> Skin Absorption	<input checked="" type="checkbox"/> Eye Contact	<input checked="" type="checkbox"/> Inhalation	<input type="checkbox"/> Ingestion
Acetic Acid (Vinegar) solution – is an irritant to eyes, skin and respiratory tract.					
WHMIS Symbols]					
Potential Health Effects:					
*Skin – Irritant on skin. May cause burns and/or dermatitis in some individuals. Wear neoprene gloves.					
*Eyes: Avoid contact with eyes. Severe damage to eyes may occur. Wear safety goggles and/or face shield.					
*Inhalation: Avoid prolonged breathing of vapors. May cause dizziness, or irritation to respiratory tract. Use in well ventilated area.					
*Ingestion: Concentrated vinegars may cause pain, irritation and burns in mouth, esophagus and stomach.					

SECTION 4 — FIRST AID MEASURES

Skin Contact	Flush with water immediately for at least 15min. Seek Medical attention if irritation persists.
Eye Contact	Flush with water immediately for at least 15min. Seek Medical attention if irritation persists.
Inhalation	Remove individual to fresh air immediately. If breathing difficulty persists, provide oxygen and contact a physician.
Ingestion	Do not induce vomiting. Rinse mouth with water, and drink 1 glass of water or Milk of Magnesia.

SAMPLE FORMAT PROVIDED BY THE WORKERS' COMPENSATION BOARD OF BRITISH COLUMBIA

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SECTION 5 — FIRE FIGHTING MEASURES

Flammable <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		If yes, under which conditions?	
Means of Extinction Under normal conditions the extraction liquid (a dilute Acetic Acid) is not flammable; however, if there should be an incident involving this solution, use Carbon Dioxide, Dry Chemical Powder, Foam or Water Spray to extinguish the fire.			
Flashpoint (° C) and Method N/A		Upper Flammable Limit (% by volume) N/A	Lower Flammable Limit (% by volume) N/A
Autoignition Temperature (°C) N/A		Explosion Data — Sensitivity to Impact N/A	Explosion Data — Sensitivity to Static Discharge N/A
Hazardous Combustion Products N/A			
[NFPA]: Protective clothing – As in any fire, wear a self-contained breathing apparatus and full protective gear.			

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures	
* Spill Procedure - Water may be used to dilute extraction solution. Treat or dispose of waste material as a weak acid in accordance with local, state and federal requirements. Do not let product enter drains.	
* Methods of containment: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.	

SECTION 7 — HANDLING AND STORAGE

Handling Procedures and Equipment * Use chemical resistant (Neoprene) gloves when handling.	
* Avoid contact with skin or eyes. Avoid prolonged inhalation of vapors (or mist).	
Storage Requirements * Keep storage container tightly closed in a dry, well-ventilated location.	
* Containers which are open must be carefully re-sealed, and kept upright to prevent leakage.	

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits <input type="checkbox"/> ACGIH TLV <input checked="" type="checkbox"/> OSHA PEL = 8hrs (Permissible Exposure Limit) <input type="checkbox"/> Other (<i>specify</i>)			
Specific Engineering Controls (such as ventilation, enclosed process) * Use in well ventilated area. Local exhaust system recommended. General exhaust system also acceptable.			
* Facilities storing or utilizing this material should be equipped with an eyewash station, and/or safety shower.			
Personal Protective Equipment <input checked="" type="checkbox"/> Gloves <input checked="" type="checkbox"/> Respirator <input checked="" type="checkbox"/> Eye <input checked="" type="checkbox"/> Footwear <input checked="" type="checkbox"/> Clothing <input type="checkbox"/> Other			
If checked, please specify type * Gloves - Wear chemical resistant (neoprene) gloves. Be sure to check for leaks prior to use, and dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash hands after handling.			
* Respirator – When airborne exposures exceed applicable limits, wear NIOSH/MSHA approved respiratory protection; such as a Full Face supplied air respirator, or an Acid Respirator. Occupational Exposure standard is an 8hr time weighted average (or TWA).			
* Eye Protection - Wear Safety Goggles, or a Face Shield while handling. * Other protective clothing – Impervious clothing and boots.			

SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid	Odour and Appearance Colorless	Odour Threshold (ppm) 10 ppm
Specific Gravity 1.01 at 100 grain	Vapour Density (air = 1) 2.1	Vapour Pressure (mmHg) 16.9 mm Hg at 100 grain
Evaporation Rate N/A	Boiling Point (° C) 214 deg F	Freezing Point (° C) 26 deg F at 100 grain
pH 2.2 at 100 grain	Coefficient of Water/Oil Distribution N/A	[Solubility in Water] Complete

SECTION 10 — STABILITY AND REACTIVITY

Chemical Stability <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If no, under which conditions?
Incompatibility with other Substances <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, which ones? Most metals, bases and reducing agents. Strong oxidizing agents and strong bases.
Polymerization?	
* Product is stable and will not undergo polymerization.	
Hazardous Decomposition Products	
* Decomposition will not occur if stored and handled correctly.	

SECTION 11 — TOXICOLOGICAL INFORMATION

Effects of Acute Exposure			
* No toxic effects are likely; however it is an irritant to eyes, skin and respiratory tract – due to vapors.			
Effects of chronic exposure			
Irritancy of Product Irritant to skin and eyes			
Skin sensitization	Avoid exposure to skin, wear gloves	Respiratory sensitization	Avoid prolonged exposure to vapors
Carcinogenicity-IARC	No known cancer hazard	Carcinogenicity - ACGIH	None known
Reproductive toxicity	Not a reproductive hazard	Teratogenicity	N/A
Embrototoxicity	N/A	Mutagenicity	N/A
Name of synergistic products/effects N/A			

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SECTION 12 — ECOLOGICAL INFORMATION

[Aquatic Toxicity]

* No data available

Persistence and degradability

* No data available

Other adverse effects

* No data available

SECTION 13 — DISPOSAL CONSIDERATIONS

Waste Disposal

* Treat or dispose of waste material in accordance with all local, state/provincial and national requirements.

SECTION 14 — TRANSPORT INFORMATION

Special Shipping Information

* None Required (Dilute Vinegar solution)

PIN

TDG

[DOT] Not listed as a Dangerous Good, per 49 CFR, Oct 1, 2016

[IMO]

[ICAO]

SECTION 15 — REGULATORY INFORMATION

[WHMIS Classification]

[OSHA]

[SERA]

[TSCA]

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

SECTION 16 — OTHER INFORMATION

Dilute Vinegar solution - composed mostly of Water and Acetic Acid.

Cross References : Vinegar MSDS sheets with concentrations approximately equal to a 5-10% Acetic Acid solution.

49 CFR 2016 and IATA Dangerous Goods Regulations 59 th Edition, 2018.

(Note: The information above is furnished without warranty, expressed or implied; except that it is accurate to the best of the preparer's. The data on this sheet is related only to the specific materials designated herein. The preparer assumes no legal responsibility.)