

SAFETY DATA SHEET

Issue Date 08-Aug-2019 **Revision Date** 26-Jan-2024 **Version** 1.6 **Page** 1 / 13

1. IDENTIFICATION

Product identifier

Product Name 3 M KCI Solution Saturated with AgCI

Other means of identification

Product Code(s) 2841700

Safety data sheet number M02149

Recommended use of the chemical and restrictions on use

Recommended Use Reference electrode solution.
Uses advised against Consumer use.

Restrictions on use For Laboratory Use Only.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company, P.O.Box 389, Loveland, CO 80539, USA, +1(970) 669-3050

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word

None

Hazard statements

The product contains no substances which at their given concentration, are considered to be hazardous to health

Other Hazards Known

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

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Substance Not applicable

Mixture

Chemical Family Mixture.

Chemical nature Aqueous solution of inorganic salts.

Percent ranges are used where confidential product information is applicable.

Chemical name	CAS No	Percent Range	HMRIC #
Potassium nitrate	7757-79-1	<0.1%	-
Silver chloride	7783-90-6	<0.01%	-

4. FIRST AID MEASURES

Description of first aid measures

General advice No hazards which require special first aid measures. Use first aid treatment according to the

nature of the injury.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids.

Consult a physician.

Skin contact Wash skin with soap and water.

Ingestion Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects, both acute and delayed

Symptoms See Section 11 for additional Toxicological Information.

Indication of any immediate medical attention and special treatment needed

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the

surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the

chemical

No information available.

Hazardous combustion products This material will not burn.

Special protective equipment for

fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Use personal protection equipment.

6. ACCIDENTAL RELEASE MEASURES

U.S. Notice Only persons properly qualified to respond to an emergency involving hazardous

substances may respond to a spill according to federal regulations (OSHA 29 CFR

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1910.120(a)(v)) and per your company's emergency response plan and

guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should

respond to a spill involving chemicals.

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Reference to other sections See section 8 for more information. See section 13 for more information.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

Flammability class Not applicable

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational

exposure limits established by the region specific regulatory bodies

Appropriate engineering controls

Engineering Controls

Showers

Eyewash stations Ventilation systems.

Individual protection measures, such as personal protective equipment

Respiratory protectionNo protective equipment is needed under normal use conditions. If exposure limits are

exceeded or irritation is experienced, ventilation and evacuation may be required.

Hand Protection Wear suitable gloves.

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protectionNo special protective equipment required.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

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Environmental exposure controls

Local authorities should be advised if significant spillages cannot be contained. Do not allow

into any sewer, on the ground or into any body of water.

Thermal hazards None under normal processing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state

Property

pН

Liquid

Appearance

aqueous solution

Color

colorless

Odor Odorless Odor threshold No data available

Molecular weight

Values

Remarks • Method

6.2

@ 20 °C

Melting point / freezing point

Initial boiling point and boiling range

~ -37 °C / -34.6 °F ~ 110 °C / 230 °F

Evaporation rate

0.94 (water = 1)

No data available

Vapor pressure

21.977 mm Hg / 2.93 kPa at 25 °C / 77 °F

Relative vapor density

0.62

1.13

Specific gravity - VALUE 1

Partition coefficient

Not applicable Not applicable

Soil Organic Carbon-Water Partition Coefficient

Autoignition temperature

No data available

Decomposition temperature

No data available

Dynamic viscosity

~ 1.2 cP (mPa s) at 20 °C / 68 °F

Kinematic viscosity

~ 1.062 cSt (mm²/s) at 20 °C / 68 °F

Solubility(ies)

Water solubility

Water solubility classification_	Water solubility	Water Solubility Temperature_
Soluble	> 1000 mg/L	25 °C / 77 °F

Solubility in other solvents

Chemical Name	Solubility classification	Solubility	Solubility Temperature
Acid	Soluble	> 1000 mg/L	25 °C / 77 °F
Most Polar Organic Solvents	Soluble	> 1000 mg/L	25 °C / 77 °F

Other information

Metal Corrosivity

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Steel Corrosion Rate Aluminum Corrosion Rate No data available No data available

Volatile Organic Compounds (VOC) Content

Chemical name	CAS No	Volatile organic compounds (VOC) content	CAA (Clean Air Act)	
Potassium nitrate	7757-79-1	No data available	-	
Silver chloride	7783-90-6	No data available	-	

Explosive properties

Upper explosion limitNo data availableLower explosion limitNo data available

Flammable properties

Flash point No data available

Flammability Limit in Air

Upper flammability limit:No data availableLower flammability limit:No data available

Oxidizing properties No data available.

Bulk density

No data available

10. STABILITY AND REACTIVITY

Reactivity

Not applicable.

Chemical stability

Stable under normal conditions.

Explosion data

Sensitivity to Mechanical Impact None. **Sensitivity to Static Discharge** None.

Possibility of hazardous reactions

None under normal processing.

Hazardous polymerization

No information available.

Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong oxidizing agents, strong acids, and strong bases.

Hazardous decomposition products

Potassium oxide. Hydrogen chloride. Hydrogen chloride. Chlorides.

11. TOXICOLOGICAL INFORMATION

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Information on likely routes of exposure

Product Information

Inhalation No known effect based on information supplied.

Eye contact No known effect based on information supplied.

Skin contact No known effect based on information supplied.

Ingestion No known effect based on information supplied.

Symptoms No information available.

Acute toxicity

Based on available data, the classification criteria are not met

Mixture

No data available.

Ingredient Acute Toxicity Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium nitrate (<0.1%) CAS#: 7757-79-1	Rat LD ₅₀	3015 mg/kg	None reported	None reported	IUCLID
Silver chloride (<0.01%) CAS#: 7783-90-6	Mouse LD ₅₀	> 10000 mg/kg	None reported	None reported	RTECS

Unknown Acute Toxicity

0.0006% of the mixture consists of ingredient(s) of unknown toxicity.

Acute Toxicity Estimations (ATE)

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	14,228.60 mg/kg
ATEmix (dermal)	99,999.00 mg/kg
ATEmix (inhalation-dust/mist)	99,999.00 mg/l
ATEmix (inhalation-vapor)	99,999.00 mg/l
ATEmix (inhalation-gas)	99,999.00 ppm

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Skin Corrosion/Irritation Data

No data available.

Serious eye damage/irritation

Based on available data, the classification criteria are not met.

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Mixture

No data available.

Ingredient Eye Damage/Eye Irritation Data

No data available.

Respiratory or skin sensitization

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Sensitization Data

No data available.

STOT - single exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Single Exposure Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint	Reported	Exposure	Toxicological effects	Key literature references and
	type	dose	time		sources for data
Potassium nitrate	Rat	10 mg/kg	None reported	Blood	RTECS
(<0.1%)	TDLo			Methemoglobinemia-Carboxyhe	
CAS#: 7757-79-1				moglobin	

STOT - repeated exposure

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Specific Target Organ Toxicity Repeat Exposure Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium nitrate (<0.1%) CAS#: 7757-79-1	Mouse TD⊾∘	36000 mg/kg	,	Kidney, Ureter, or Bladder Evidence of thyroid hypofunction, Changes in thyroid weight	RTECS

Carcinogenicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Carcinogenicity Data

No data available.

С	Chemical name	CAS No	ACGIH	IARC	NTP	OSHA
P	otassium nitrate	7757-79-1	-	Group 2A	-	X

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Legend

ACGIH (American Conference of Governmental Industrial Hygienists)	Does not apply
IARC (International Agency for Research on Cancer)	Group 2A - Probably Carcinogenic to
	Humans
NTP (National Toxicology Program)	Does not apply
OSHA	X - Present

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Mixture invitro Data

No data available.

Substance invitro Data

Test data reported below.

Chemical name	Test	Cell Strain	Reported dose	Exposure time	Results	Key literature references and sources for data
Potassium nitrate (<0.1%) CAS#: 7757-79-1	Gene conversion and mitotic recombination	Escherichia coli	5 mg/L	None reported	Positive test result for mutagenicity	RTECS

Mixture invivo Data

No data available.

Substance invivo Data

No data available.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Mixture

No data available.

Ingredient Reproductive Toxicity Data

Test data reported below.

Oral Exposure Route

Chemical name	Endpoint type	Reported dose	Exposure time	Toxicological effects	Key literature references and sources for data
Potassium nitrate	Rat	598 mg/kg	21 days	Effects on Newborn	RTECS
(<0.1%)	TD_Lo			Reproductive	
CAS#: 7757-79-1				Behavioral	

Aspiration hazard

Based on available data, the classification criteria are not met.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Unknown aquatic toxicity0.0006% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

<u>Mixture</u>

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Aquatic Acute Toxicity

No data available.

Aquatic Chronic Toxicity

No data available.

Substance

Aquatic Acute Toxicity

Test data reported below.

Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Potassium nitrate (<0.1%) CAS#: 7757-79-1	96 hours	Gambusia affinis	LC50	> 100 mg/L	ECHA
Silver chloride (<0.01%) CAS#: 7783-90-6	96 hours	Pimephales promelas	LC50	0.0012 mg/L	ECHA

Crustacea

Chemical name	Exposure	Species	Endpoint	Reported dose	Key literature references and
	time		type		sources for data
Potassium nitrate (<0.1%) CAS#: 7757-79-1	48 Hours	Daphnia magna	EC50	490 mg/L	Vendor SDS

Aquatic Chronic Toxicity

Test data reported below.

Fish

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Silver chloride (<0.01%) CAS#: 7783-90-6	None reported	Oncorhynchus mykiss	EC ₁₀	0.00017 mg/L	No information available

Crustacea

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Silver chloride (<0.01%)	None reported	Pseudokirchneriella subcapitata	EC ₁₀	0.00041 mg/L	No information available
CAS#: 7783-90-6					

Algae

Chemical name	Exposure time	Species	Endpoint type	Reported dose	Key literature references and sources for data
Silver chloride (<0.01%) CAS#: 7783-90-6	None reported	Salvinia natans	EC ₁₀	0.0148 mg/L	No information available

Persistence and degradability

Mixture

No data available.

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Bioaccumulation

MATERIAL DOES NOT BIOACCUMULATE

Mixture

No data available.

Partition coefficient Not applicable

Mobility

Soil Organic Carbon-Water Partition Coefficient Not applicable

Other adverse effects
No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues/unused

products

Dispose of in accordance with local regulations. Dispose of waste in accordance with

environmental legislation.

Contaminated packaging Do not reuse empty containers.

US EPA Waste Number No data available

Special instructions for disposal Dispose of material in an E.P.A. approved hazardous waste facility. Check with local

municipal and state authorities and waste contractors for pertinent local information

regarding the proper disposal of chemicals.

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

IATA Not regulated

IMDG Not regulated

Note: No special precautions necessary.

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

National Inventories

TSCA Complies DSL/NDSL Complies

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

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EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
TCSI	Complies
AICS	Complies
NZIoC	Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical name	SARA 313 - Threshold Values %
Potassium nitrate (CAS #: 7757-79-1)	1.0
Silver chloride (CAS #: 7783-90-6)	1.0

SARA 311/312 Hazard Categories

Acute health hazard	No
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Silver chloride	-	X	-	-
7783-90-6				

CERCL A

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

Chemical name	U.S Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues
Potassium nitrate (<0.1%)	Theft - Explosives/Improvised Explosive Device Precursors
CAS#: 7757-79-1	

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

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IMERC: Not applicable

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations.

Chemical name	New Jersey	Massachusetts	Pennsylvania
Potassium nitrate 7757-79-1	X	X	X
Silver chloride 7783-90-6	X	-	Х

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL)

Chemical name	Global Automotive Declarable Substance List Classifications	Global Automotive Declarable Substance List Thersholds
Silver chloride 7783-90-6	Declarable Substance (LR)	None reported

NFPA and HMIS Classifications

NFPA	Health hazards - 0	Flammability - 0	Instability - 0	Physical and chemical properties -
HMIS	Health hazards - 0	Flammability - 0	Physical hazards - 0	Personal protection -
				X
				- 1

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	ACGIH (American Conference of Governmental Industrial Hygienists)
ATSDR	ATSDR (Agency for Toxic Substances and Disease Registry)
CCRIS	CCRIS (Chemical Carcinogenesis Research Information System)
CDC	CDC (Center for Disease Control)

CEPA (Canadian Environmental Protection Agency)

CICAD CICAD (Concise International Chemical Assessment Documents)

ECHA ECHA (The European Chemicals Agency)
EEA EEA (European Environment Agency)
EPA EPA (Environmental Protection Agency)

ERMA ERMA (New Zealands Environmental Risk Management Authority)

ECOSARS Estimation through ECOSARS v1.11 part of the Estimation Programs Interface (EPI) Suite™

FDA FDA (Food & Drug Administration)

GESTIS GESTIS (Information System on Hazardous Substances of the German Social Accident

Insurance)

HSDB (Hazardous Substances Data Bank)

INERIS INERIS (The National Industrial Environment and Risks Institute)
IPCS INCHEM IPCS INCHEM (International Programme on Chemical Safety)
IUCLID IUCLID (The International Uniform Chemical Information Database)
NITE Japan National Institute of Technology and Evaluation (NITE)

NIH (National Institutes of Health)

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NIOSH NIOSH (National Institute for Occupational Safety and Health) LOLI LOLI (List of Lists - An International Chemical Regulatory Database)

NDF no data

NICNAS Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)

Immediately Dangerous to Life or Health NIOSH IDLH

OSHA OSHA (Occupational Safety and Health Administration of the US Department of Labor)

PEEN (Pan European Ecological Network) **PEEN**

RTECS (Registry of Toxic Effects of Chemical Substances) **RTECS** SIDS (Screening Information Dataset) for High Volume Chemicals SIDS

SYKE The Finnish Environment Institute (SYKE) USDA (United States Department of Agriculture) **USDA** USDC (United States Department of Commerce) **USDC**

WHO WHO (World Health Organization)

Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)

MAC Maximum Allowable Concentration Ceiling Limit Value Ceiling

Listed Vacated These values have no official status. The only Х

binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state

regulations.

SKN* Skin designation SKN+ Skin sensitization RSP+ Respiratory sensitization Hazard Designation Carcinogen R Reproductive toxicant

M mutagen

Prepared By Hach Product Compliance Department

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Revision Note None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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End of Safety Data Sheet

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