



Kit Summary

Product Code(s) VB-3027
Product name Colloidal Iron Stain Kit

Acetic acid Solution

Chemical Name	EC-No	CAS-No	Weight%	Classification (Reg. 1272/2008)	REACH Registration Number
Acetic acid	200-580-7	64-19-7		Skin Corr. 1A (H314) Flam Liq. 3 (H226)	-

Hydrochloric acid Solution

Chemical Name	EC-No	CAS-No	Weight%	Classification (Reg. 1272/2008)	REACH Registration Number
Hydrochloric acid	231-595-7	7647-01-0		STOT SE3 (H335) Skin Corr. 1B (H314)	-

Potassium Ferrocyanide Solution

Chemical Name	EC-No	CAS-No	Weight%	Classification (Reg. 1272/2008)	REACH Registration Number
Potassium hexacyano ferrate	-	14459-95-1		Aquatic Chronic 3(H412)	No data available

Colloidal Iron Stock Solution

Chemical Name	EC-No	CAS-No	Weight%	Classification (Reg. 1272/2008)	REACH Registration Number
Iron(III) chloride	231-729-4	7705-08-0		Skin Irrit. 2 (H315)EyeDam.1(H318) Acute Tox. 4 (H302)	-

Van Gieson's Solution

Chemical Name	EC-No	CAS-No	Weight%	Classification (Reg. 1272/2008)	REACH Registration Number
Picric Acid	201-865-9	88-89-1		Acute Tox. 3 (H301)Acute Tox. 3 (H311) Acute Tox. 3 (H331)Expl.1.1; (H201)	-
Acid Fuchsin	221-816-5	3244-88-0		STOTSE 3 (H335) Skin Irrit. 2 (H315)EyeIrrit. 2 (H319)	-

GHS/ CLP - GHS - Classification



Signal Word

Warning

Hazard statements

H302- Harmful if swallowed

H317 - May cause an allergic skin reaction
H319- Causes serious eye irritation

H412- Harmful to aquatic life with long lasting effects

Precautionary Statements-EU(§28,1272/2008)

P261- Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P264 - Wash face, hands and any exposed skin thoroughly after

handling
P280- Wear protective gloves/ eye protection/ face protection

P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P273- Avoid release to the environment

P272 - Contaminated work clothing should not be allowed out of the

workplace
P270- Do not eat, drink or smoke when using this product

P337 + P313 - If eye irritation persists: Get medical advice/

attention
P302+ P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/

attention
P363- Wash contaminated clothing before reuse

P501- Dispose of contents/ container to an approved waste disposal plant

2.3 Other information

A safety data sheet follows for all potentially hazardous components—all other components are non-hazardous.

TRANSPORT INFORMATION**DOT**

Proper shipping name	Limited Quantity Acetic acid solution
Hazard class	8
UN/ID No	UN2790
Packing group	III

IATA

UN/ID No	Limited Quantity UN2790
Proper shipping name	Acetic acid solution
Hazard class	8
Packing group	III

ADR

Proper shipping name	Limited Quantity Acetic acid solution
Hazard class	8
UN/ID No	UN2790
Packing group	III



Safety Data Sheet

Revision Date Jan, 06-2022 Version2

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Acetic acid Solution (VB-3027-1)
UN/IDNo UN2790
Recommended use For research use only

Address: 405 E. Gude Dr., Suite 214, Rockville, MD 20850

Phone: 800-260-9817 (Toll Free), 301-500-0499

Fax: 844-248-6208

Email: info@vitrovivo.com

2. HAZARDS IDENTIFICATION

GHS- Classification

Ozone	Not applicable
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GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No	Weight%	Classification(Reg. 1272/2008)
Acetic acid	64-19-7	7-13	Skin Corr. 1A (H314) Flam Liq. 3 (H226)

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

Eyecontact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.
Skincontact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Move to fresh air.
Ingestion	Clean mouth with water. Drink plenty of water.
Notesto physician	Treat symptomatically.

5. FIRE-FIGHTINGMEASURES

Flammable properties	Not flammable.
Flashpoint	not determined
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Protective equipment and precautions for fire fighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH(approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation.
Environmental precautions	Try to prevent the material from entering drains or water courses.
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.

7. HANDLING AND STORAGE

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acetic acid 64-19-7	STEL: 15 ppm TWA: 10 ppm	TWA: 10 ppm TWA: 25 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 25 mg/m ³	IDLH: 50 ppm TWA: 10 ppm TWA: 25 mg/m ³ STEL: 15 ppm STEL: 37 mg/m ³

Engineering measures Showers Eye wash stations Ventilation systems

Personal protective equipment

Eye/face protection No special protective equipment required.
Skin and body protection No special protective equipment required.
Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available.	Odor	No information available.
Odor Threshold	No information available	Physical State @20°C	No information available
pH	No information available	Auto ignition temperature	No information available
Flashpoint	No information available	Boiling point/boiling range	No information available
Decomposition temperature	No information available	Flammability Limits in Air	No information available
Melting point/range	No information available	Solubility	No information available.
Explosion limits	No information available	Vapor Pressure @20°C (kPa)	No information available
Specific Gravity	No data available	VOC Content (%)	3
Evaporation rate	No information available		
Vapor density	No data available		

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.
Incompatible products None known based on information supplied.
Conditions to avoid None known based on information supplied.
Hazardous decomposition products None known based on information supplied.
Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Chemical Name	LD50Oral	LD50Dermal	LC50Inhalation
Acetic acid	3310mg/kg(Rat)	1060mg/kg (Rabbit)	11.4 mg/L(Rat) 4 h

Chronic toxicity

Target Organ Effects Eyes. Respiratory system. Skin. Teeth.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Aceticacid		79: 96 h Pimephalespromelas mg/L LC50 static75: 96 h Lepomismacrochirus mg/L LC50static		47:24 h Daphnia magna mg/LEC50 65: 48 h Daphnia magna mg/L EC50Static
Chemical Name			log Pow	
Acetic acid			-0.31	

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Acetic acid	Toxic Corrosive Ignitable

14. TRANSPORT INFORMATION

DOT
Proper shipping name Limited Quantity
 Acetic acid solution
Hazard class 8.0
UN/IDNo UN2790
Packing group III

IATA
UN/IDNo Limited Quantity
 UN2790
Proper shipping name Acetic acid solution

Hazard class 8.0
Packing group III

ADR Limited Quantity
Proper shipping name Acetic acid solution
Hazard class 8.0
UN/IDNo UN2790
Packing group III

15. REGULATORY INFORMATION

U.S.Federal Regulations

SARA313

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.

SARA311/312 Hazard Categories

Acute Health Hazard no
Chronic Health Hazard no
Fire Hazard no
Sudden Release of Pressure Hazard no
Reactive Hazard no

Clean Water Act

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

Chemical Name	CWA - Reportable Quantities	CWA- Toxic Pollutants	CWA- Priority Pollutants	CWA - Hazardous Substances
Acetic acid	5000lb			X

CERCLA

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.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Acetic acid	5000lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S.State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S.State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Acetic acid	X	X	X		X

International Regulations

Chemical Name	Carcinogen Status	Exposure limits
Acetic acid		Mexico: TWA 10 ppm Mexico: TWA 25mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 37mg/m ³

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

16. OTHER INFORMATION

Fulltext of H-Statements referred to under sections 2 and 3

H314- Causes severe skin burns and eye damage H226 - Flammable liquid and vapor

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Safety Data Sheet

Revision Date Jan,06,2022 Version 2

1.PRODUCT AND COMPANY IDENTIFICATION

Product name Hydrochloric acid Solution (VB-3027-2)

Recommended use For research use only

Address: 405 E. Gude Dr., Suite 214, Rockville, MD 20850

Phone: 301-500-0499

Fax: 844-248-6208

Email: info@vitrovivo.com

2. HAZARDS IDENTIFICATION

GHS- Classification

Skin sensitization	Category1
Chronic aquatic toxicity	Category3

GHSLabel elements, including precautionary statements



Signal Word

Warning

Hazard statements

H317- May cause an allergic skin reaction

H412- Harmful to aquatic life with long lasting effects

Precautionary Statements-EU(\$28,1272/2008)

P261- Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray

P272 - Contaminated work clothing should not be allowed out of the workplace
P280- Wear protective gloves/ eye protection/ face protection

P302+ P352 - IF ON SKIN: Wash with plenty of soap and water

P333 + P313 - If skin irritation or rash occurs: Get medical advice/ attention

P363- Wash contaminated clothing before reuse

P501 - Dispose of contents/ container to an approved waste disposal plant

P273 -Avoid release to the environment

Other information

No information available

3.COMPOSITION/INFORMATION ON INGREDIENTS

3.1Substances

Chemical Name	CAS-No	Weight%	Classification(Reg. 1272/2008)
Hydrochloric acid	7647-01-0	1-5	STOT SE3 (H335) Skin Corr. 1B (H314)

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice	If symptoms persist, call a physician.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.
Skincontact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. If symptoms persist, call physician.
Inhalation	Move to fresh air.
Ingestion	Clean mouth with water. Drink plenty of water.
Notesto physician	May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTINGMEASURES

Flammable properties	Not flammable.
Flashpoint	not determined
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Explosion Data</u>	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Specific hazards arising from the chemical	Thermal decomposition can lead to release of irritating gases and vapors In the event of fire and/or explosion do not breathe fumes May cause sensitization by inhalation and skin contact
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use personal protective equipment. Avoid contact with the skin and the eyes.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses.
Methods for containment	Prevent further leakage or spillage if safe to do so.
Methods for cleaning up	Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water. Prevent product from entering drains.

7. HANDLING AND STORAGE

Advice on safe handling	Ensure adequate ventilation. Wear personal protective equipment.
Technical measures/Storage conditions	Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrochloric acid 7647-01-0	Ceiling: 2 ppm	(vacated) Ceiling: 5 ppm (vacated) Ceiling: 7 mg/m ³ Ceiling: 5 ppm Ceiling: 7 mg/m ³	IDLH: 50 ppm Ceiling: 5 ppm Ceiling: 7 mg/m ³

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures Showers
Eye wash stations
Ventilation systems

Personal protective equipment

Eye/face protection Tightly fitting safety goggles.

Skin and body protection No special protective equipment required.

Respiratory protection If exposure limits are exceeded or irritation is experienced; NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available.	Odor	No information available.
Odor Threshold	No information available	PhysicalState@20°C	No information available
pH	No information available		
Flashpoint	No information available	Auto ignition temperature	No information available
Decomposition temperature	No information available	Boiling point/boiling range	No information available
Melting point/range	No information available		
		Flammability Limits in Air	No information available
Explosion limits	No information available		
Specific Gravity	No data available	Solubility	No information available.
Evaporation rate	No information available	Vapor Pressure @20°C (kPa)	No information available
Vapor density	No data available	VOC Content(%)	Not applicable

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible products	None known based on information supplied.
Conditions to avoid	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information May cause sensitization of susceptible persons

Chemical Name	LD50Oral	LD50Dermal	LC50Inhalation
Hydrochloric acid	700 mg/kg(Rat)	5010mg/kg (Rabbit)	3124ppm(Rat) 1 h

Chronic toxicity

Chronic toxicity Repeated contact may cause allergic reactions in very susceptible persons Avoid repeated exposure

Carcinogenicity This product contains one or more substances which are classified by IARC as carcinogenic to humans (Group I), probably carcinogenic to humans (Group 2A) or possibly carcinogenic to humans(Group 2B)

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrochloric acid		Group3		

IARC :(International Agency for Research on Cancer)
Group3 - Not Classifiable as to Carcinogenicity in Humans

Sensitization Asa precaution the product should be treated as a sensitizer.

TargetOrgan Effects Eyes. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Hydrochloric acid		282: 96 h Gambusia affinis mg/L LC50 static		

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging

Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT

Not dangerous goods

IATA

Not dangerous goods

ADR

Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight%	SARA 313 - Threshold Values %
Hydrochloric acid	7647-01-0	2	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	no
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

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
Hydrochloric acid	5000lb			X

VB-3027-2 Hydrochloric Acid Solution

CERCLA

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.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Hydrochloric acid	5000lb	5000lb	RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S.State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S.State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hydrochloric acid	X	X	X	X	X

International Regulations

Chemical Name	Carcinogen Status	Exposure limits
Hydrochloric acid		Mexico: Ceiling 5 ppm Mexico: Ceiling 7mg/m ³

WHMIS Note:

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

16. OTHER INFORMATION

Fulltext of H-Statements referred to under sections 2 and 3

H314 - Causes severe skin burns and eye damage H317 - May cause an allergic skin reaction H335 - May cause respiratory irritation H412- Harmful to aquatic life with long lasting effects

Hazardstatements

H317- May cause an allergic skin reaction
H412- Harmful to aquatic life with long lasting effects

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Safety Data Sheet

Revision Date Jan. 06, 2022 Version 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Potassium Ferrocyanide Solution (VB-3017-3)
Recommended use For research use only
Address: 405 E. Gude Dr., Suite 214, Rockville, MD 20850
Phone: 301-500-0499
Fax: 844-248-6208
Email: info@vitrovivo.com

2. HAZARDS IDENTIFICATION

GHS- Classification

Ozone	Not applicable
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GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No	Weight%	Classification(Reg. 1272/2008)
Potassium hexacyanoferrate	14459-95-1	1-5	Aquatic Chronic 3 (H412)

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Eye contact	immediately flushes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Move to fresh air.
Ingestion	Clean mouth with water. Drink plenty of water.
Notesto physician	Treat symptomatically.

5. FIRE-FIGHTINGMEASURES

Flammable properties	Not flammable.
Flashpoint	not determined
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Explosion Data</u>	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation.
Environmental precautions	Try to prevent the material from entering drains or water courses.
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.

7. HANDLING AND STORAGE

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Potassium hexacyanoferrate 1 4459-95-1	TWA: 1 mg/m ³ Fe	TWA: 5 mg/m ³ CN (vacated) TWA: 1 mg/m ³ Fe (vacated) TWA: 5 mg/m ³ S*	IDLH: 25 mg/m ³ CN TWA: 1 mg/m ³ Fe

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir, 1992).

Engineering measures Showers Eye wash stations Ventilation systems

Personal protective equipment

Eye/face protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available.	Odor	No information available.
Odor Threshold	No information available	Physical State @ 20°C	No information available
PH	No information available	Auto ignition temperature	No information available
Flashpoint	No information available	Boiling point/boiling range	No information available
Decomposition temperature	No information available	Flammability Limits in Air	No information available
Melting point/range	No information available	solubility	No information available.
Explosion limits	No information available	Vapor Pressure @ 20°C (kPa)	No information available
Specific Gravity	No data available	VOC Content (%)	Not applicable
Evaporation rate	No information available		
Vapor density	No data available		

10. STABILITY AND REACTIVITY

Stability Stable under recommended storage conditions.

Incompatible products None known based on information supplied.

Conditions to avoid None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

Hazardous polymerization Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Chronic toxicity

Chronic toxicity May cause adverse liver effects

Target Organ Effects Eyes. Gastrointestinal tract (GI). Liver. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight%	SARA 313 - Threshold Values %
Potassium hexacyanoferrate	14459-95-1	1	1.0

SARA311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	no
Fire Hazard	no
Sudden Release of Pressure Hazard	no

ReactiveHazard no

CleanWater Act

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

ChemicalName	CWA - Reportable Quantities	CWA- Toxic Pollutants	CWA- Priority Pollutants	CWA - Hazardous Substances
Potassium hexacyanoferrate		X		

CERCLA

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.State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S.State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Potassium hexacyanoferrate			X	X	X

International Regulations

Chemical Name	Carcinogen Status	Exposure limits
Potassium hexacyanoferrate		Mexico: TWA 1 mg/m ³ Mexico: TWA 5mg/m ³ Mexico: STEL 2mg/m ³

WHMIS Note:

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

16. OTHER INFORMATION

Fulltext of H-Statements referred to under sections 2 and 3

H412- Harmful to aquatic life with long lasting effects

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Safety Data Sheet

Revision Date Jan, 06, 2022 Version 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product name Colloidal Iron Stock Solution (VB-3027-4)

Recommended use For research use only

Address: 405 E. Gude Dr., Suite 214, Rockville, MD 20850

Phone: 800-260-9817 (Toll Free), 301-500-0499

Fax: 844-248-6208

Email: info@vitrovivo.com

2. HAZARDS IDENTIFICATION

GHS- Classification

Acute oral toxicity	Category4
Serious eye damage/eye irritation	Category2

GHSLabel elements, including precautionary statements



Signal Word

Warning

Hazard statements

H302- Harmful if swallowed

H319- Causes serious eye irritation

Precautionary Statements-EU(\$28,1272/2008)

P264 - Wash face, hands and any exposed skin thoroughly after

handlingP270- Do not eat, drink or smoke when using this product

P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel

unwellP501- Dispose of contents/ container to an approved waste disposal plant

P280- Wear protective gloves/ eye protection/ face protection

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 advice/ attention

Other information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No	Weight%	Classification(Reg. 1272/2008)
Iron(III) chloride	7705-08-0	1-5	Skin Irrit. 2 (H315)EyeDam.1(H 318) AcuteTox. 4 (H302)

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice	If symptoms persist, call a physician.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If symptoms persist, call a physician.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. If symptoms persist, call a physician.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Ingestion	Rinse mouth. If symptoms persist, call a physician.
Note to physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable properties	Not flammable.
Flashpoint	not determined
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
<u>Explosion Data</u>	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Protective equipment and precautions for fire fighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6.ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation.
Environmental precautions	Try to prevent the material from entering drains or water courses.
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.

7.HANDLING AND STORAGE

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURECONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIHTLV	OSHAPEL	NIOSHIDLH
Iron (III) chloride7705 -08-0	TWA:1 mg/m ³ Fe	(vacated)TWA: 1mg/m ³ Fe	TWA:1 mg/m ³ Fe

NIOSHIDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962(11th Cir., 1992).

Engineering measures

- Showers
- Eye wash stations
- Ventilation systems

Personal protective equipment

Eye/face protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygienemeasures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available.	Odor	No information available.
Odor Threshold	No information available	PhysicalState@20°C	No information available
pH	No information available	Auto ignition temperature	No information available
Flashpoint	No information available	Boiling point/boiling range	No information available
Decomposition temperature	No information available	Flammability Limits in Air	No information available
Melting point/range	No information available		
Explosion limits	No information available		
Specific Gravity	No data available	solubility	No information available.
Evaporation rate	No information available	Vapor Pressure @20°C (kPa)	No information available
Vapor density	No data available	VOCContent(%)	Not applicable

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible products	None known based on information supplied.
Conditions to avoid	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information	Harmful if swallowed Irritating to skin, eyes and / or respiratory tract.
Inhalation	May cause irritation of respiratory tract
Eye contact	May cause irritation
Skin contact	May cause irritation
Ingestion	Harmful if swallowed Ingestion may cause irritation to mucous membranes

Chemical Name	LD50Oral	LD50Dermal	LC50Inhalation
Iron(III) chloride	316 mg/kg(Rat)		

Chronic toxicity

Chronic toxicity	May cause adverse liver effects
Target Organ Effects	Eyes. Gastrointestinal tract (GI). Liver. Respiratory system. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Iron(III) chloride		75.6:96 h <i>Gambusia affinis</i> mg/L LC50 static 20.26: 96 h <i>Lepomis macrochirus</i> mg/LLC50 semi-static 20.95-22.56:96 h <i>Pimephales promelas</i> mg/LLC50 semi-static		27.9:48 h <i>Daphnia magna</i> mg/LEC50 9.6: 48 h <i>Daphnia magna</i> mg/L EC50Static
Chemical Name		log Pow		
Iron(III) chloride		-4		

13. DISPOSAL CONSIDERATIONS

Waste disposal methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging

Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Iron(III) chloride	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

Not dangerous goods

IATA

Not dangerous goods

ADR

Not dangerous goods

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA313

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.

SARA311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	no
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

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).

ChemicalName	CWA - Reportable Quantities	CWA- Toxic Pollutants	CWA- Priority Pollutants	CWA - Hazardous Substances
Iron(III) chloride	1000lb			X

CERCLA

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.

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Iron(III) chloride	1000lb		RQ 1000 lb final RQ RQ 454 kg final RQ

U.S.State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S.State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Iron(III) chloride	X	X	X		X

International Regulations

Chemical Name	Carcinogen Status	Exposure limits
Iron(III) chloride		Mexico: TWA 1 mg/m³ Mexico: STEL 2mg/m³

WHMIS Note:

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H302- Harmful if swallowed H315 - Causes skin irritation H318 - Causes serious eye damage H319 - Causes serious eye irritation

Hazard statements

H302- Harmful if swallowed

H319- Causes serious eye irritation

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.



Safety Data Sheet

Revision Date Jan,06,2022 Version 2

1.PRODUCT AND COMPANY IDENTIFICATION

Product name Van Gieson's Solution (VB-3027-5)

Recommended use For research use only

Address: 405 E. Gude Dr., Suite 214, Rockville, MD 20850

Phone: 800-260-9817 (Toll Free), 301-500-0499

Fax: 844-248-6208

Email: info@vitrovivo.com

2. HAZARDS IDENTIFICATION

GHS- Classification

Ozone	Not applicable
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GHS Label elements, including precautionary statements

Not dangerous

Other information

No information available

3.COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS-No	Weight%	Classification(Reg. 1272/2008)
Picric Acid	88-89-1	0.1-1	Acute Tox. 3 (H301)Acute Tox. 3 (H311)Acute Tox. 3 (H331)Expl.1.1; (H201)
Acid Fuchsin	3244-88-0	0.1-1	STOTSE 3 (H335) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)

For the full text of the H-Statements mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Eye contact	immediately flushes with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Inhalation	Move to fresh air.
Ingestion	Clean mouth with water. Drink plenty of water.
Notesto physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable properties	Not flammable.
Flashpoint	not determined
Suitable extinguishing media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Explosion Data	
Sensitivity to Mechanical Impact	None.
Sensitivity to Static Discharge	None.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation.
Environmental precautions	Try to prevent the material from entering drains or water courses.
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.

7. HANDLING AND STORAGE

Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Chemical Name	ACGIHTLV	OSHA PEL	NIOSH IDLH
Picric Acid 88-89-1	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³ (vacated) TWA: 0.1 mg/m ³ (vacated) S*S*	IDLH: 75 mg/m ³ TWA: 0.1 mg/m ³ STEL: 0.3 mg/m ³

NIOSH IDLH: Immediately Dangerous to Life or Health

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Engineering measures
 Showers
 Eye wash stations
 Ventilation systems

Personal protective equipment

Eye/face protection

No special protective equipment required.

Skin and body protection

No special protective equipment required.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	No information available.	Odor	No information available.
Odor Threshold	No information available	PhysicalState@20°C	No information available
pH	No information available	Auto ignition temperature	No information available
Flashpoint	No information available	Boiling point/boiling range	No information available
Decomposition temperature	No information available	Flammability Limits in Air	No information available
Melting point/range	No information available		
Explosion limits	No information available		
Specific Gravity	No data available	solubility	No information available.
Evaporation rate	No information available	Vapor Pressure @20°C (kPa)	No information available
Vapor density	No data available	VOC Content(%)	Not applicable

10. STABILITY AND REACTIVITY

Stability	Stable under recommended storage conditions.
Incompatible products	None known based on information supplied.
Conditions to avoid	None known based on information supplied.
Hazardous decomposition products	None known based on information supplied.
Hazardous polymerization	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product Information Product does not present an acute toxicity hazard based on known or supplied information

Chronic toxicity

Chronic toxicity May cause adverse liver effects

Target Organ Effects Blood. Eyes. Kidney. Liver. Skin.

12. ECOLOGICAL INFORMATION

Ecotoxicity

The environmental impact of this product has not been fully investigated.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods This material, as supplied, is not a hazardous waste according to Federal regulations (40CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Picric Acid	Ignitable Reactive

14. TRANSPORT INFORMATION

DOT Not dangerous goods

IATA Not dangerous goods

ADR Not dangerous goods

15. REGULATORY INFORMATION

U.S.Federal Regulations

SARA313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

SARA311/312 Hazard Categories

Acute Health Hazard	no
Chronic Health Hazard	no
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

Clean Water Act

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

CERCLA

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.State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S.State Right-to-Know Regulations

Chemical Name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island

PicricAcid	X	X	X		X
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International Regulations

Chemical Name	Carcinogen Status	Exposure limits
Picric Acid		Mexico: TWA 0.1 mg/m ³ Mexico: STEL 0.3 mg/m ³

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

16. OTHER INFORMATION

Fulltext of H-Statements referred to under sections 2 and 3

H201 - Explosive; mass explosion hazard
 H301 - Toxic if swallowed
 H311 - Toxic in contact with skin
 H315 - Causes skin irritation
 H319 - Causes serious eye irritation
 H331 - Toxic if inhaled
 H335 - May cause respiratory irritation

Disclaimer

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End of MSDS