



# Diagnostic BioSystems

## Safety Data Sheet MICROWAVE P.T.A.H. STAIN KIT OSHA

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### SECTION 1: Identification

#### 1.1 GHS Product identifier

Product name	MICROWAVE P.T.A.H. STAIN KIT
Product number	KT029
Brand	MICROWAVE P.T.A.H. STAIN KIT

#### 1.2 Other means of identification

Component 1: Ferric Ammonium Sulfate Solution  
Component 2: P.T.A.H Solution  
Component 3: Zinc Chloride Solution

#### 1.3 Recommended use of the chemical and restrictions on use

In Vitro Diagnostic Use

#### 1.4 Supplier's details

Name	Diagnostic Biosystems
Address	6616 Owens Drive Pleasanton CA 94588 USA
Telephone	(888) 896-3350
email	customersupport@dbiosys.com

#### 1.5 Emergency phone number

(925) 484-3350 (9AM-6PM, Monday - Friday, Pacific Standard Time)

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### SECTION 2: Hazard identification

#### 2.1 Classification of the substance or mixture

##### GHS classification in accordance with: OSHA (29 CFR 1910.1200)

- Acute toxicity, oral (chapter 3.1), Cat. 5
- Eye damage/irritation (C.4.5), Cat. 1
- Skin corrosion/irritation (C.4.4), Cat. 1A
- Toxic to reproduction (C.4.10), Cat. 2

#### 2.2 GHS label elements, including precautionary statements

##### Pictogram

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1. Exclamation mark; 2. Corrosion; 3. Health hazard

**Signal word**

**Danger**

**Hazard statement(s)**

H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H332	Harmful if inhaled
H361	Suspected of damaging fertility or the unborn child

**Precautionary statement(s)**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash hands thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a POISON CENTER/doctor if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container to a licensed disposal company.

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**SECTION 3: Composition/information on ingredients**

**3.2 Mixtures**

**Components**

**Component 1. Ferric Ammonium Sulfate Solution**

**1. Iron (III) Ammonium Sulfate Dodecahydrate**  
Concentration 3 % (weight)  
CAS no. 7783-83-7

**2. Phosphotungstic Acid Hydrate**  
Concentration 2 % (weight)  
CAS no. 12501-23-4

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### 3. HEMATOXYLIN

Concentration	0.1 % (weight)
Other names / synonyms	Benz[b]indeno[1,2-d]pyran-3,4,6a,9,10(6H)-pentol, 7,11b-dihydro-, cis-(++)-;
CAS no.	517-28-2

### Component 2. P.T.A.H Solution

#### 1. Potassium permanganate

Concentration	0.1 % (weight)
Other names / synonyms	Permanganic acid (HMnO <sub>4</sub> ), potassium salt;
EC no.	231-760-3
CAS no.	7722-64-7
Index no.	025-002-00-9

- Oxidizing solids (chapter 2.14), Cat. 2
- Reproductive toxicity (chapter 3.7), Cat. 2
- Acute toxicity, oral (chapter 3.1), Cat. 4
- Hazardous to the aquatic environment, short-term (acute) (chapter 4.1), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic) (chapter 4.1), Cat. 1

H272	May intensify fire; oxidizer
H302	Harmful if swallowed
H361d	
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

### Component 3. Zinc Chloride Solution

#### 1. Zinc chloride

Concentration	10 % (weight)
Other names / synonyms	Zinc chloride (ZnCl <sub>2</sub> ); Zinci chloridum
EC no.	231-592-0
CAS no.	7646-85-7
Index no.	030-003-00-2

- Acute toxicity, oral (chapter 3.1), Cat. 4
- Skin corrosion/irritation (chapter 3.2), Cat. 1B
- Hazardous to the aquatic environment, short-term (acute) (chapter 4.1), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic) (chapter 4.1), Cat. 1

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
SCLs/M-factors/ATEs	STOT SE 3; H335: C ≥ 5 %

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### 2. Acetic acid

Concentration 3 % (volume)

Other names / synonyms acetic acid; ACETIC ACID; ACETIC ACID, GLACIAL; ACETICACID; Acidum aceticum; ETHANOIC ACID; ETHYLIC ACID; GLACIAL ACETIC ACID; METHANECARBOXYLIC ACID; UN 2789; UN 2790; VINEGAR ACID

EC no. 200-580-7

CAS no. 64-19-7

Index no. 607-002-00-6

- Flammable liquids (chapter 2.6), Cat. 3
- Skin corrosion/irritation (chapter 3.2), Cat. 1A

H226 Flammable liquid and vapor  
H314 Causes severe skin burns and eye damage  
SCLs/M-factors/ATEs Skin Corr. 1A; H314:  $C \geq 90 \%$   
Skin Corr. 1B; H314:  $25 \% \leq C < 90 \%$   
Skin Irrit. 2; H315:  $10 \% \leq C < 25 \%$   
Eye Irrit. 2; H319:  $10 \% \leq C < 25 \%$

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## SECTION 4: First-aid measures

### 4.1 Description of necessary first-aid measures

General advice Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration.

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

In case of skin contact Rinse with plenty of water. Get medical attention if irritation develops and persists.

In case of eye contact Rinse thoroughly with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

If swallowed Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Personal protective equipment for first-aid responders

Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Fire-fighting measures

### 5.1 Suitable extinguishing media

Use extinguishing media appropriate for surrounding fire.

### 5.2 Specific hazards arising from the chemical

Carbon oxides

### 5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

#### Further information

No data available.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

Ensure adequate ventilation. Use personal protective equipment. For personal protection see section 8.

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

### 6.2 Environmental precautions

Should not be released into the environment. See Section 12 for additional ecological information.

### 6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

#### Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

#### Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

**CAS: 64-19-7 (EC: 200-580-7)**

Acetic acid

ACGIH (USA): 15 ppm STEL inhalation; 10 ppm, (ST) 15 ppm TLV® inhalation; 10 ppm TWA inhalation;  
Cal/OSHA (USA): 40 ppm C inhalation; 10 ppm, (ST) 15 ppm, (C) 40 ppm PEL inhalation; 10 ppm, 25 mg/m<sup>3</sup>  
PEL inhalation; 15 ppm, 37 mg/m<sup>3</sup> STEL inhalation; NIOSH (USA): 10 ppm, (ST) 15 ppm REL inhalation; 15  
ppm, 37 mg/m<sup>3</sup> ST inhalation; 10 ppm, 25 mg/m<sup>3</sup> TWA inhalation; OSHA (USA): 25 mg/m<sup>3</sup> PEL inhalation; 10  
ppm PEL inhalation; 10 ppm, 25 mg/m<sup>3</sup> TWA inhalation

**CAS: 7646-85-7**

Zinc chloride

Cal/OSHA: 1 mg/m<sup>3</sup>, (ST) 2 mg/m<sup>3</sup> PEL inhalation; NIOSH: 1 mg/m<sup>3</sup>, (ST) 2 mg/m<sup>3</sup> REL inhalation; OSHA: 1  
mg/m<sup>3</sup> PEL inhalation

### **8.2 Appropriate engineering controls**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### **8.3 Individual protection measures, such as personal protective equipment (PPE)**

**Pictograms**



**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body protection**

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Thermal hazards**

No data available

**Control banding approach**

No data available.

**Environmental exposure controls**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## **SECTION 9: Physical and chemical properties and safety characteristics**

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Physical state	Liquid
Appearance	Colored Dyes
Color	Various
Odor	Acetic Acid
Odor threshold	No data available.
pH	Various
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Vapor pressure	No data available.
Relative vapor density	No data available.
Density and/or relative density	No data available.
Solubility	No data available.
Partition coefficient n-octanol/water (log value)	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
Kinematic viscosity	No data available.
Explosive properties	No data available.
Oxidizing properties	No data available.

### Particle characteristics

No data available.

### Supplemental information regarding physical hazard classes

No data available.

### Further safety characteristics (supplemental)

No data available.

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None under normal use conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

None under normal use conditions.

### 10.4 Conditions to avoid

Exposure to moisture.

Avoid storing in direct sunlight and avoid extremes of temperature.

Heat, flames and sparks.

### 10.5 Incompatible materials

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Acetic acid: Oxidizing agents, Soluble carbonates and phosphates, Hydroxides, Metals, Peroxides, permanganates, e.g. potassium permanganate, Amines, Alcohols, Nitric acid

### 10.6 Hazardous decomposition products

Other decomposition products - No data available In the event of fire: see section 5

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Acetic acid: Hazardous decomposition products formed under fire conditions. - Carbon oxides  
Other decomposition products - No data available  
In the event of fire: see section 5

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## SECTION 11: Toxicological information

### Information on toxicological effects

#### Acute toxicity

The ATE (oral) of the mixture is: 3333.33 mg/kg bw

Acetic acid

LD50 Oral - Rat - 3,310 mg/kg

Acetic acid

LC50 Inhalation - Mouse - 5620 ppm - 1 h

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Conjunctive irritation. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Eye:Other. Blood:Other changes.

Acetic acid

LC50 Inhalation - Rat - 11.4 mg/l - 4 h

Acetic acid

LD50 Skin - Rat - 1,112 mg/kg

#### Skin corrosion/irritation

Acetic acid

LD50 Skin - Rat - 1,112 mg/kg

#### Serious eye damage/irritation

Based on available data, classification data are not met

#### Respiratory or skin sensitization

Acetic acid

LD50 Skin - Rat - 1,112 mg/kg

#### Germ cell mutagenicity

Based on available data, classification data are not met

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.



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OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

Based on available data, classification data are not met

### STOT-single exposure

No data available.

### STOT-repeated exposure

No data available.

### Aspiration hazard

No data available.

### Additional information

No data available.

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## SECTION 12: Ecological information

### Toxicity

Acetic acid

EC50 - Daphnia magna (water flea) - >300.82 mg/l - 48 h

Citation: (OECD Test Guideline 202)

### Persistence and degradability

No data available.

### Bioaccumulative potential

No data available.

### Mobility in soil

No data available.

### Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

### Endocrine disrupting properties

No data available.

### Other adverse effects

No data available.

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## SECTION 13: Disposal considerations

### Disposal methods

#### Product disposal

Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Packaging disposal

Dispose of as unused product.

#### Waste treatment

No data available

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### Sewage disposal

Do not let product enter drains

### Other disposal recommendations

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

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## SECTION 14: Transport information

### DOT (US)

UN Number: UN1760

Class: 8

Packing Group: I

Proper Shipping Name: Corrosive liquids, n.o.s.

Reportable quantity (RQ):

Marine pollutant:

Poison inhalation hazard:

### IMDG

UN Number: UN1760

Class: 8

Packing Group: I

EMS Number:

Proper Shipping Name: Corrosive liquids, n.o.s.

### IATA

UN Number: UN1760

Class: 8

Packing Group: I

Proper Shipping Name: Corrosive liquids, n.o.s.

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## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

#### Canadian Domestic Substances List (DSL)

Chemical name: Benz[b]indeno[1,2-d]pyran-3,4,6a,9,10(6H)-pentol, 7,11b-dihydro-, cis-(++)-

CAS: 517-28-2

Chemical name: Permanganic acid (HMnO<sub>4</sub>), potassium salt

CAS: 7722-64-7

Chemical name: Zinc chloride (ZnCl<sub>2</sub>)

CAS: 7646-85-7

Chemical name: Acetic acid

CAS: 64-19-7

#### Massachusetts Right To Know Components

Chemical name: Potassium permanganate

CAS number: 7722-64-7

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Chemical name: Zinc chloride  
CAS number: 7646-85-7

Acetic acid  
CAS number: 64-19-7

**New Jersey Right To Know Components**  
Common name: POTASSIUM PERMANGANATE  
CAS number: 7722-64-7

Common name: ZINC CHLORIDE  
CAS number: 7646-85-7

Acetic acid  
CAS number: 64-19-7

**Pennsylvania Right To Know Components**  
Chemical name: Permanganic acid, potassium salt  
CAS number: 7722-64-7

Chemical name: Zinc chloride  
CAS number: 7646-85-7

Acetic acid  
CAS number: 64-19-7

**SARA 302 Components**  
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 311/312 Hazards**  
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**SARA 313 Components**  
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### 15.2 Chemical Safety Assessment

The supplier of this product has not conducted any Chemical Safety Assessment

#### HMIS Rating

MICROWAVE P.T.A.H. STAIN KIT	OSHA
HEALTH	2
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	B

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## SECTION 16: Other information

SDS-0128, Rev. A

**Safety Data Sheet**  
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**16.1 Further information/disclaimer**

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Diagnostic BioSystems be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Diagnostic BioSystems has been advised of the possibility of such damages.