

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product identifier**

**Product name** Mixed Acid Reagent

**Other means of identification**

**Product Code(s)** V-6278

**Recommended use of the chemical and restrictions on use**

**Recommended Use** Use as a laboratory reagent. Laboratory chemicals. Industrial (not for food or food contact use).

**Details of the supplier of the safety data sheet**

LaMotte Company, Inc.  
802 Washington Avenue  
P.O. Box 329  
Chestertown, MD 21620 USA  
T 410-778-3100  
F 410-778-9748


**Emergency telephone number**

24 Hour Emergency Number (CHEM-TEL): USA, Canada, Puerto Rico 1-800-255-3924 Outside North American Continent (Call collect) 813-248-0585

## 2. HAZARDS IDENTIFICATION

|                                   |             |
|-----------------------------------|-------------|
| Serious eye damage/eye irritation | Category 2A |
|-----------------------------------|-------------|

### EMERGENCY OVERVIEW

|                                                                                     |                              |                     |
|-------------------------------------------------------------------------------------|------------------------------|---------------------|
| <b>WARNING</b>                                                                      |                              |                     |
| <b>Hazard statements</b><br>Causes serious eye irritation.                          |                              |                     |
|  |                              |                     |
| <b>Appearance</b> Clear Blue green                                                  | <b>Physical state</b> liquid | <b>Odor</b> vinegar |

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling. Wear eye/face protection.

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.  
IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
IF SWALLOWED: Drink 1 or 2 glasses of water. Call a physician immediately.

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep cool.

**Precautionary Statements - Disposal**

Dispose of contents/containers in accordance with local regulations.

**3. COMPOSITION/INFORMATION ON INGREDIENTS\***

| Chemical name       | CAS No     | Weight-% |
|---------------------|------------|----------|
| Acetic acid         | 64-19-7    | 2        |
| Citric acid         | 77-92-9    | 4        |
| Sodium chloride USP | 7647-14-5  | 10       |
| Ammonium chloride   | 12125-02-9 | 17       |

**4. FIRST AID MEASURES****First Aid Measures**

|                                           |                                                                                                                                                                                                    |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Do not get in eyes, on skin, or on clothing. Show this safety data sheet to the doctor in attendance.                                                                                              |
| <b>Eye contact</b>                        | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately.                                                                             |
| <b>Skin contact</b>                       | Wash off immediately with soap and plenty of water for at least 15 minutes. Take off contaminated clothing and wash before reuse. If symptoms persist, call a physician.                           |
| <b>Inhalation</b>                         | Remove to fresh air. If symptoms persist, call a physician.                                                                                                                                        |
| <b>Ingestion</b>                          | Drink plenty of water. Consult a physician if necessary.                                                                                                                                           |
| <b>Self-protection of the first aider</b> | Use personal protection recommended in Section 8. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. |
| <b>Notes to Physician</b>                 | Treat symptomatically.                                                                                                                                                                             |

**5. FIREFIGHTING MEASURES****Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**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.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures**

|                                  |                                                                                              |
|----------------------------------|----------------------------------------------------------------------------------------------|
| <b>Personal precautions</b>      | Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. |
| <b>Environmental precautions</b> | See Section 12 for additional Ecological Information.                                        |

**Methods and material for containment and cleaning up**

|                                |                                                                                                                                                                                                                 |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Methods for containment</b> | Dispose of contents/containers in accordance with local regulations. Absorb/Cover spill with sodium bicarbonate or sodium carbonate to neutralize, then place in a chemical waste container for later disposal. |
| <b>Methods for cleaning up</b> | After cleaning, flush away traces with water. If local regulations permit, rinse to drain with excess water.                                                                                                    |

## 7. HANDLING AND STORAGE

### Precautions for safe handling

|                 |                                                                                                                                                                                                |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Handling</b> | Handle in accordance with good industrial hygiene and safety practice. Do not taste or swallow. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Conditions for safe storage, including any incompatibilities

|                              |                                                                                                                                    |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>Storage</b>               | Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Keep out of the reach of children. |
| <b>Incompatible Products</b> | Alkalis. Strong oxidizing agents. Strong bases.                                                                                    |

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

| Chemical name                    | ACGIH TLV                                                         | OSHA PEL                                                                                                 | NIOSH IDLH                                                                                             |
|----------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Acetic acid<br>64-19-7           | STEL: 15 ppm<br>TWA: 10 ppm                                       | TWA: 10 ppm<br>TWA: 25 mg/m <sup>3</sup><br>(vacated) TWA: 10 ppm<br>(vacated) TWA: 25 mg/m <sup>3</sup> | IDLH: 50 ppm<br>TWA: 10 ppm<br>TWA: 25 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 37 mg/m <sup>3</sup> |
| Citric acid<br>77-92-9           | -                                                                 | -                                                                                                        | Not Established                                                                                        |
| Sodium chloride USP<br>7647-14-5 | -                                                                 | -                                                                                                        | Not Established                                                                                        |
| Ammonium chloride<br>12125-02-9  | STEL: 20 mg/m <sup>3</sup> fume<br>TWA: 10 mg/m <sup>3</sup> fume | (vacated) TWA: 10 mg/m <sup>3</sup> fume<br>(vacated) STEL: 20 mg/m <sup>3</sup> fume                    | TWA: 10 mg/m <sup>3</sup> fume<br>STEL: 20 mg/m <sup>3</sup> fume                                      |

### Appropriate engineering controls

|                             |                                                                                                                                                                |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Engineering Measures</b> | Provide appropriate exhaust ventilation at places where dust is formed. Ensure that eyewash stations and safety showers are close to the workstation location. |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Individual protection measures, such as personal protective equipment

|                                 |                                                                                                                                                                                                  |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye/Face Protection</b>      | Wear safety glasses with side shields (or goggles). Avoid contact with eyes.                                                                                                                     |
| <b>Skin and body protection</b> | Gloves & Lab Coat. Impervious clothing. Protective gloves. Rubber gloves. Nitrile rubber.                                                                                                        |
| <b>Respiratory protection</b>   | Maintain adequate ventilation.                                                                                                                                                                   |
| <b>Hygiene Measures</b>         | Avoid contact with eyes, skin and clothing. Handle in accordance with good industrial hygiene and safety practice. Wash hands and face before breaks and immediately after handling the product. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

|                       |                  |             |         |
|-----------------------|------------------|-------------|---------|
| <b>Physical state</b> | liquid           | <b>Odor</b> | vinegar |
| <b>Appearance</b>     | Clear Blue green |             |         |

| <u>Property</u>                | <u>Values</u>            | <u>Remarks • Method</u> |
|--------------------------------|--------------------------|-------------------------|
| pH                             | 2-3                      |                         |
| Melting point / freezing point | No information available |                         |
| Boiling point / boiling range  | > 100 °C / 212 °F        |                         |
| Flash point                    | Not Applicable           |                         |
| Evaporation rate               |                          |                         |
| Flammability (solid, gas)      | No information available |                         |
| Flammability Limit in Air      |                          |                         |
| Upper flammability limit:      | No information available |                         |
| Lower flammability limit:      | No information available |                         |
| Vapor pressure                 | No information available |                         |
| Vapor density                  | No information available |                         |
| Specific gravity               | No data available        |                         |
| Water solubility               | Soluble in water         |                         |
| Solubility in other solvents   | No information available |                         |
| Partition coefficient          | No information available |                         |
| Autoignition temperature       | No information available |                         |
| Decomposition temperature      | No information available |                         |
| Kinematic viscosity            | No information available |                         |
| Dynamic viscosity              | No information available |                         |
| Explosive properties           | No information available |                         |
| Oxidizing properties           | No information available |                         |

**Other Information**

|                  |                          |
|------------------|--------------------------|
| Softening point  | No information available |
| Molecular weight | No information available |
| VOC Content (%)  | No information available |
| Density          | No information available |
| Bulk density     | No information available |

**10. STABILITY AND REACTIVITY**

|                                         |                                                                     |
|-----------------------------------------|---------------------------------------------------------------------|
| <b>Stability</b>                        | Stable.                                                             |
| <b>Hazardous Reactions</b>              | Hazardous polymerization does not occur.                            |
| <b>Hazardous polymerization</b>         | Hazardous polymerization does not occur.                            |
| <b>Conditions to avoid</b>              | Exposure to air or moisture over prolonged periods. Excessive heat. |
| <b>Incompatible materials</b>           | Alkalis. Strong oxidizing agents. Strong bases.                     |
| <b>Hazardous decomposition products</b> | Ammonia. Hydrogen chloride. Sodium oxides.                          |

**11. TOXICOLOGICAL INFORMATION**

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

**Information on likely routes of exposure**

|                     |                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------|
| <b>Inhalation</b>   | None known.                                                                                      |
| <b>Eye contact</b>  | May cause temporary eye irritation.                                                              |
| <b>Skin contact</b> | Substance may cause slight skin irritation.                                                      |
| <b>Ingestion</b>    | May be harmful if swallowed. May cause gastrointestinal discomfort if consumed in large amounts. |

**Component identification**

| <b>Chemical name</b>             | <b>ATEmix (oral)</b>                  | <b>ATEmix (dermal)</b>  | <b>Inhalation LC50</b>            |
|----------------------------------|---------------------------------------|-------------------------|-----------------------------------|
| Acetic acid<br>64-19-7           | = 3310 mg/kg ( Rat )                  | = 1060 mg/kg ( Rabbit ) | = 11.4 mg/L ( Rat ) 4 h           |
| Citric acid<br>77-92-9           | = 3 g/kg ( Rat ) = 3000 mg/kg ( Rat ) | Not Established         | Not Established                   |
| Sodium chloride USP<br>7647-14-5 | = 3 g/kg ( Rat )                      | > 10 g/kg ( Rabbit )    | > 42 g/m <sup>3</sup> ( Rat ) 1 h |

|                                 |                      |                 |                 |
|---------------------------------|----------------------|-----------------|-----------------|
| Ammonium chloride<br>12125-02-9 | = 1650 mg/kg ( Rat ) | Not Established | Not Established |
|---------------------------------|----------------------|-----------------|-----------------|

**Information on toxicological effects****Carcinogenicity** There are no known carcinogenic chemicals in this product.

| Chemical name                    | ACGIH           | IARC            | NTP             | OSHA            |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|
| Acetic acid<br>64-19-7           | Not Established | Not Established | Not Established | Not Established |
| Citric acid<br>77-92-9           | Not Established | Not Established | Not Established | Not Established |
| Sodium chloride USP<br>7647-14-5 | Not Established | Not Established | Not Established | Not Established |
| Ammonium chloride<br>12125-02-9  | Not Established | Not Established | Not Established | Not Established |

ATEmix (oral) 6,421.00 mg/kg  
ATEmix (dermal) 34,641.00 mg/kg

**12. ECOLOGICAL INFORMATION****Ecotoxicity****Unknown Aquatic Toxicity** 0.27 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

| Chemical name                    | Toxicity to Algae | Toxicity to Fish                                                                                                                                                                                                                                                                                                                              | Daphnia Magna (Water Flea)                                                            |
|----------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Acetic acid<br>64-19-7           | Not Established   | 75: 96 h Lepomis macrochirus mg/L LC50 static 79: 96 h Pimephales promelas mg/L LC50 static                                                                                                                                                                                                                                                   | 47: 24 h Daphnia magna mg/L EC50 65: 48 h Daphnia magna mg/L EC50 Static              |
| Citric acid<br>77-92-9           | Not Established   | 1516: 96 h Lepomis macrochirus mg/L LC50 static                                                                                                                                                                                                                                                                                               | 120: 72 h Daphnia magna mg/L EC50                                                     |
| Sodium chloride USP<br>7647-14-5 | Not Established   | 4747 - 7824: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 5560 - 6080: 96 h Lepomis macrochirus mg/L LC50 flow-through 6020 - 7070: 96 h Pimephales promelas mg/L LC50 static 6420 - 6700: 96 h Pimephales promelas mg/L LC50 static 12946: 96 h Lepomis macrochirus mg/L LC50 static 7050: 96 h Pimephales promelas mg/L LC50 semi-static | 340.7 - 469.2: 48 h Daphnia magna mg/L EC50 Static 1000: 48 h Daphnia magna mg/L EC50 |
| Ammonium chloride<br>12125-02-9  | Not Established   | 209: 96 h Cyprinus carpio mg/L LC50 static 725: 24 h Lepomis macrochirus mg/L LC50                                                                                                                                                                                                                                                            | 202: 24 h Daphnia magna mg/L LC50                                                     |

**Persistence and degradability**

No information available.

**Bioaccumulation/Accumulation**

No information available.

| Chemical name                    | Log Pow         |
|----------------------------------|-----------------|
| Acetic acid<br>64-19-7           | -0.31           |
| Citric acid<br>77-92-9           | -1.72           |
| Sodium chloride USP<br>7647-14-5 | Not Established |
| Ammonium chloride<br>12125-02-9  | Not Established |

**13. DISPOSAL CONSIDERATIONS****Disposal Methods**

Dispose of contents/containers in accordance with local regulations.

**Contaminated packaging**

Dispose of waste product or used containers according to local regulations.

| Chemical name                    | RCRA            | RCRA - Basis for Listing | RCRA - D Series Wastes | RCRA - U Series Wastes |
|----------------------------------|-----------------|--------------------------|------------------------|------------------------|
| Acetic acid<br>64-19-7           | Not Established | -                        | Not Established        | Not Established        |
| Citric acid<br>77-92-9           | Not Established | -                        | Not Established        | Not Established        |
| Sodium chloride USP<br>7647-14-5 | Not Established | -                        | Not Established        | Not Established        |
| Ammonium chloride<br>12125-02-9  | Not Established | -                        | Not Established        | Not Established        |

| Chemical name                    | RCRA - Halogenated Organic Compounds | RCRA - P Series Wastes | RCRA - F Series Wastes | RCRA - K Series Wastes |
|----------------------------------|--------------------------------------|------------------------|------------------------|------------------------|
| Acetic acid<br>64-19-7           | Not Established                      | Not Established        | Not Established        | Not Established        |
| Citric acid<br>77-92-9           | Not Established                      | Not Established        | Not Established        | Not Established        |
| Sodium chloride USP<br>7647-14-5 | Not Established                      | Not Established        | Not Established        | Not Established        |
| Ammonium chloride<br>12125-02-9  | Not Established                      | Not Established        | Not Established        | Not Established        |

| Chemical name                    | California Hazardous Waste Status |
|----------------------------------|-----------------------------------|
| Acetic acid<br>64-19-7           | Toxic<br>Corrosive<br>Ignitable   |
| Citric acid<br>77-92-9           | -                                 |
| Sodium chloride USP<br>7647-14-5 | -                                 |
| Ammonium chloride<br>12125-02-9  | -                                 |

**14. TRANSPORT INFORMATION****DOT** Not regulated**ICAO** Not regulated**IATA** Not regulated**IMDG/IMO** Not regulated**RID** Not regulated**15. REGULATORY INFORMATION****International Inventories**

|                      |                 |
|----------------------|-----------------|
| <b>TSCA</b>          | Complies        |
| <b>DSL/NDL</b>       | Does not comply |
| <b>EINECS/ELINCS</b> | Does not comply |
| <b>ENCS</b>          | Does not comply |
| <b>IECSC</b>         | Complies        |
| <b>KECL</b>          | Does not comply |
| <b>PICCS</b>         | Complies        |
| <b>AICS</b>          | Complies        |

**Legend:**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

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

AICS - Australian Inventory of Chemical Substances

**US 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                    | SARA 313 - Threshold Values % |
|----------------------------------|-------------------------------|
| Acetic acid<br>64-19-7           | Not Established               |
| Citric acid<br>77-92-9           | Not Established               |
| Sodium chloride USP<br>7647-14-5 | Not Established               |
| Ammonium chloride<br>12125-02-9  | 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  |

**CWA (Clean Water Act)**

This product contains the following substances which are regulated 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 |
|----------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Acetic acid<br>64-19-7           | 5000 lb                     | Not Established        | Not Established           | X                          |
| Citric acid<br>77-92-9           | Not Established             | Not Established        | Not Established           | Not Established            |
| Sodium chloride USP<br>7647-14-5 | Not Established             | Not Established        | Not Established           | Not Established            |
| Ammonium chloride<br>12125-02-9  | 5000 lb                     | Not Established        | Not Established           | X                          |

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

| Chemical name                    | Hazardous Substances RQs | CERCLA/SARA RQ  | RQ                                         |
|----------------------------------|--------------------------|-----------------|--------------------------------------------|
| Acetic acid<br>64-19-7           | 5000 lb                  | Not Established | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |
| Citric acid<br>77-92-9           | -                        | Not Established | -                                          |
| Sodium chloride USP<br>7647-14-5 | -                        | Not Established | -                                          |
| Ammonium chloride<br>12125-02-9  | 5000 lb                  | Not Established | RQ 5000 lb final RQ<br>RQ 2270 kg final RQ |

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals

| Chemical name                    | California Proposition 65 |
|----------------------------------|---------------------------|
| Acetic acid<br>64-19-7           | Not Established           |
| Citric acid<br>77-92-9           | Not Established           |
| Sodium chloride USP<br>7647-14-5 | Not Established           |
| Ammonium chloride<br>12125-02-9  | Not Established           |

**U.S. State Right-to-Know Regulations**

| Chemical name                    | New Jersey      | Massachusetts   | Pennsylvania    |
|----------------------------------|-----------------|-----------------|-----------------|
| Acetic acid<br>64-19-7           | X               | X               | X               |
| Citric acid<br>77-92-9           | Not Established | Not Established | Not Established |
| Sodium chloride USP<br>7647-14-5 | Not Established | Not Established | Not Established |
| Ammonium chloride<br>12125-02-9  | X               | X               | X               |

**CPSC (Consumer Product Safety Commission) - Specially Regulated Substances**

| Chemical name          | CPSC (Consumer Product Safety Commission) - Specially Regulated Substances |
|------------------------|----------------------------------------------------------------------------|
| Acetic acid<br>64-19-7 | Add POISON to label, 16 CFR 1500.129                                       |

**16. OTHER INFORMATION****NFPA**

Health hazard 1

Flammability 0

Instability 0

Physical and Chemical  
Hazards N/A

Health hazard 1



|               |   |
|---------------|---|
| Health Hazard | 1 |
| Fire Hazard   | 0 |
| Reactivity    | 0 |

Prepared by  
Issuing Date  
Disclaimer

Regulatory Affairs Department  
May-27-2015

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

**End of Safety Data Sheet**