



SECTION 1: Identification of the substance/mixture and of the company/undertaking

- 1.1 Product identifier
ACID-PAK™ 4-WAY LIQUID HARD WATER FORMULA
- 1.2 Other means of identification Not applicable
- 1.3 Recommended use of the chemical and restrictions on use
ACID-PAK™ 4-WAY LIQUID HARD WATER FORMULA is an acidifier for drinking water that is high in mineral content and is intended for (classes) pigs, calves, and poultry.
- 1.4 Details of the supplier of the safety data sheet
Alltech Inc.
3031 Catnip Hill Pike
Nicholasville, KY 40356
Phone: 859-885-9613
Fax: 859-887-6736
- 1.5 Emergency telephone number
Chem Trec: 1-800-424-9300 24 hours

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture Not applicable
H Phrases: None listed
P Phrases: None listed
- 2.2 GHS Label elements Not applicable
- 2.3 Other hazards
Inhalation: Exposure to dust may cause irritation to the nose, throat or respiratory system. If application creates dust, use appropriate approved respiratory protection. Persons with allergies should avoid exposure.
Skin Contact: Skin contact may cause a slight irritation. Symptoms may include redness, itching and pain. Persons with allergies should avoid exposure.
Eye Contact: Product may cause slight irritation. Symptoms include redness, itching and pain.
Ingestion: Not found to be toxic by oral exposure. Ingestion of this product may cause slight irritation.
Chronic Health Effects: Not identified.

SECTION 3: Composition/information of ingredients

- 3.1 Substances Not applicable
- 3.2 Mixtures

CAS#:	Component	Weight %
7732-18-5	Water	Not disclosed
77-92-9	Citric acid	Not disclosed
6132-04-3	Sodium citrate	Not disclosed
64-19-7	Acetic acid	Not disclosed
7647-14-5	Salt	Not disclosed
7447-40-7	Potassium chloride	Not disclosed
7446-19-7	Zinc sulfate	Not disclosed
7782-63-0	Iron sulfate	Not disclosed
10034-96-5	Magnesium sulfate	Not disclosed
121-32-4	Ethyl vanillin	Not disclosed
NA	Dried <i>Aspergillus oryzae</i> fermentation extract	Not disclosed
NA	Dried <i>Bacillus subtilis</i> fermentation extract	Not disclosed

NA: Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eyes: Flush eyes immediately with copious amounts of clean water for 15 minutes. If irritation or redness persists, seek medical attention if allergic response exhibited.
- Skin: Remove affected clothing immediately. Flush affected area(s) with copious amounts of soap and water. If skin surface is damaged, apply a clean dressing. Wash contaminated clothing before reuse. If irritation or redness develops, seek medical attention immediately.
- Inhalation: Remove victim from source and allow to rest in well ventilated area. If breathing is difficult, obtain medical attention immediately.
- Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Seek medical attention.

- 4.2 Most important symptoms and effects, both acute and delayed Not identified.
- 4.3 Indication of any immediate medical attention and special treatment needed Not identified.

SECTION 5: Firefighting measures

5.1 Suitable extinguishing media

Use media that is appropriate to treat surrounding fire. Consider alcohol-resistant foam, carbon dioxide, regular dry chemical, or water spray. Avoid heavy stream of water. Self contained breathing apparatus is required.

5.2 Special hazards arising from the substance or mixture

Evolves carbon dioxide, carbon monoxide or hydrocarbon fumes upon combustion.

5.3 Special protective actions for fire-fighters

Move container from fire area if it can be done without risk. Do not scatter spilled material with high pressure water streams. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products.

Fire fighters should wear self-contained breathing apparatus with full face piece operated in positive pressure mode and protective clothing to prevent contact with skin and eyes.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ventilate the area. Wear appropriate protective equipment as specified in section 8. Avoid dust formation and avoid inhalation of dust. Use a respirator or a combination filter. Keep unnecessary personnel away.

6.2 Environmental precautions

Place contaminated materials in disposal containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material. Do not dispose in canals, surface water, or ground water.

6.3 Methods and material for containment and cleaning up

Sweep, shovel, or vacuum up the material. Avoid any excess dust formation. Use caution as product may be slippery when wet. Keep product out of sewage and drainage systems and all bodies of water. Clean spills immediately. Ventilate the contaminated area. Thoroughly wash the area with water after a spill.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly with soap and water after handling. The use of respiratory protection is advised when dust concentrations exceed any established exposure limits (see section 8).

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry place. Open containers should be resealed. Shelf life under these conditions is 18 months.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Component (CAS#):	Acetic acid (CAS#: 64-19-7)
	TLV: 25 mg/m ³
	PEL: 15 ppm

8.2 Appropriate engineering controls:

Use process enclosure, general dilution ventilation, or local exhaust systems, where necessary to maintain airborne dust concentrations below the applicable regulations. A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits.

8.3 Individual protection measures

- Eye/face: Protective goggles or face shields.
- Skin: Wear impervious gloves and general purpose overalls with elasticized cuffs and leg bottoms. Persons with allergies should avoid exposure.
- Respiratory: Protection is not normally required. Wear a dust mask or other appropriate approved respiratory protection when effective engineering controls are not feasible or during operations that generate airborne dust concentrations exceeding the relevant standards. A respiratory protection program that meets applicable requirements whenever workplace conditions warrant a respirator's use. Persons with allergies should avoid exposure.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a) Physical appearance	Clear to pale yellow liquid
(b) Odour	Not available
(c) Odour Threshold	Not available
(d) Specific gravity	1.06 g/mL
(e) pH	4.71
(f) Melting point/freezing point	Not available
(g) Initial boiling point	Not available
(h) Flash point	Not available
(i) Evaporation rate	Not available
(j) Flammability	Not available
(k) Upper/lower flammability or explosive limits	Not available
(l) Vapour pressure	Not available
(m) Vapour density	Not available
(n) Relative density	Not available
(o) Solubility	Not available
(p) Partition coefficient: n-octanol/water	Not available
(q) Auto ignition temperature	Not available
(r) Decomposition temperature	Not available
(s) Viscosity	Not available

9.2 Other information

To the best of our knowledge the chemical, physical, and toxicological properties of this product have not been thoroughly investigated.

SECTION 10: Stability and reactivity

10.1	Reactivity	Not available
10.2	Chemical stability	Product is stable under normal storage conditions (21°C, 1atm).
10.3	Possibility of hazardous reactions	Not available
10.4	Conditions to avoid	Avoid moisture, heat and sources of ignition.
10.5	Incompatible materials	Not available
10.6	Hazardous decomposition products	Not available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (a) Acute toxicity | Citric acid (CAS#: 77-92-9)
Oral[rat]: 3000 mg/kg
Oral[mouse]: 5040 mg/kg

Acetic acid (CAS#: 64-19-7)
Oral[rat]: 4960 mg/kg
Oral[mouse]: 3310 mg/kg

Sodium chloride (CAS#:7647-14-5)
Oral[rat]: 3000 mg/kg
Oral[mouse]: 4000 mg/kg

Potassium chloride (CAS#:7447-40-7)
Oral[rat]: 2600 mg/kg
Oral[mouse]: 1500 mg/kg |
| (b) Skin corrosion/irritation | Not expected to be toxic. Exposure may cause slight irritation. |
| (c) Serious eye damage/irritation | Not available |
| (d) Respiratory or skin sensitization | Not available |
| (e) Germ cell mutagenicity | Not available |
| (f) Carcinogenicity | Not applicable |
| (g) Reproductive toxicity | Not applicable |
| (h) STOT-single exposure | Not applicable |
| (i) STOT-repeated exposure | Not applicable |
| (j) Aspiration hazard | Not applicable |

11.2 Information on the likely routes of exposure Not applicable

11.3 Symptoms related to the physical, chemical and toxicological characteristics Not applicable

11.4 Delayed and immediate effects and also chronic effects from short and long term exposure
 Not applicable

11.5 Other information
 Other toxicological information: To the best of our knowledge the chemical, physical and toxicological properties of this product have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Component (CAS#): Test & Species:	Citric acid (CAS#: 77-92-9) LC50[Leuciscus idus melantus]: 440 mg/l - 48h Acetic acid (CAS#: 64-19-7) LC50[Goldfish]: 423 mg/l - 24h Sodium chloride (CAS#: 7647-14-5) LC50[Lepomis macrochirus]: 1294.6 mg/l - 96h LC50[Daphnia magna]: 343 mg/l - 48h
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ACID-PAK™ 4-WAY LIQUID HARD WATER FORMULA

Completion Date: 29/04/2013

Revision Date: 13/03/2014

Version Number: 2

Potassium chloride (CAS#:7447-40-7)
LC50[Pimephales promelas]: 880 mg/l - 96h
EC50[Daphnia magna]: 83 mg/l - 48h

12.2	Persistence and degradability	Not available
12.3	Bioaccumulative potential	Not available
12.4	Mobility in soil	Not available
12.6	Other adverse effects	Not available

SECTION 13: Disposal considerations

13.1	Waste treatment methods	Not identified
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Disposal Instructions: Consult local, state and/or provincial environmental regulatory authorities for acceptable disposal procedures and locations. Follow standard disposal procedures in accordance with Directive 2008/98/EC of the European Parliament and of the Council of the Member State.

SECTION 14: Transport information

14.1	UN number	Not applicable
14.2	UN proper shipping name	Not applicable
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precautions for user	Not applicable
14.7	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable

SECTION 15: Regulatory information

15.1	Safety, health, and environmental regulation/legislation specific for the substance or mixture	Not available
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SECTION 16: Other information

Preparation Date: 13 March 2014
Issue Date: 13 March 2014
Previous Issue Date: 29 April 2013

The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, Alltech, Inc. cannot give any guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.

ACID-PAK™ 4-WAY LIQUID HARD WATER FORMULA

Acidifier for drinking water that is high in mineral content, and is intended for pigs, calves, and poultry

Directions For Use

Use at 1 quart per 128 gallons (2 mL/L):

Pigs	Post-weaning	First 5-7 days
	Moving/arrival	First 3-5 days after relocation
Calves	Milk replacer	0.33 oz/gallon
Poultry	Newly-placed chicks, poults, broiler breeder, ducks	Days 1-5 plus 1 day per week to market (broilers)
	Turkeys and Ostriches	Days 1-5 plus 1 day per week to 10 weeks
	Moving to grow-out	2 days before and 3 days after moving

Heat stress Use every other day as needed

Storage

ACID-PAK 4-WAY LIQUID HARD WATER FORMULA should be stored in a cool, dry place. Open containers should be resealed. Shelf life under these conditions is 18 months.

Net Weight: 440.9 lbs (200 kg)

Item Number: 03.0156.053.009
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Manufactured by:

Alltech, Inc. • 3031 Camp Hill Pike • Nicholasville, Kentucky 40356-8700 • USA • Tel: +1 (859) 885-9613 • Fax: +1 (859) 885-6736 • www.alltech.com

REV 03/14 AJ

Expiration Date
01/06/2015
day/month/year

Batch Number
427302-1

UPC
0 0747301 00536 4

ACID-PAK™ 4-WAY LIQUID HARD WATER FORMULA

Product Specifications

Product Description

Acid-Pak 4-Way Liquid Hard Water Formula is an acidifier for drinking water that is high in mineral content, and is intended for pigs, calves, and poultry.

Label Information

Guaranteed analysis		Ingredients
Salt	Min. 3.0% Max 4.0%	Water, Citric acid, Sodium citrate, Acetic acid, Salt, Potassium chloride, Zinc sulfate, Iron sulfate, Magnesium sulfate, Ethyl vanillin, Dried <i>Aspergillus oryzae</i> fermentation extract and Dried <i>Bacillus subtilis</i> fermentation extract.
Potassium	Min. 0.65%	

Physical Characteristics

Appearance: Acid-Pak 4-Way Liquid Hard Water Formula is a clear to pale yellow liquid.

Specific gravity: 1.06 g/ml.

Storage and Shelf Life

Acid-Pak 4-Way Liquid Hard Water Formula should be stored in a cool, dry place. Open containers should be resealed. Shelf life under these conditions is 18 months.

Packaging

Acid-Pak 4-Way Liquid Hard Water Formula is available in 1 gallon jugs, 18 kg pails and 200 kg drums.

Directions for Use

Use at 1 quart per 128 gallons (2 mL/L):

Pigs	Post-weaning	First 5-7 days
	Moving/arrival	First 3-5 days after relocation
Calves	Milk replacer	0.33 oz/gallon
Poultry	Newly-placed chicks, poults, broiler breeder, ducks	Days 1-5 plus 1 day per week to market (broilers)
	Turkeys and Ostriches	Days 1-5 plus 1 day per week to 10 weeks
	Moving to grow-out	2 days before and 3 days after moving

Heat stress: Use every other day as needed.

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		Fax: (859) 885-6736