



**0-0-4**

**SOIL CONDITIONER, CONCENTRATED POTASH SOLUTION AND LINE CLEANER**

**GUARANTEED ANALYSIS**

Soluble Potash (K<sub>2</sub>O) ..... 4.00%  
 Derived from potassium hydroxide.

**ALSO CONTAINS NON-PLANT FOOD INGREDIENTS:**

63% ..... Polyaliphatic acid salts  
 5% ..... Alkyl aryl sulfonates (as line cleaner and soil conditioning agents)  
 68% ..... Total

**KEEP OUT OF REACH OF CHILDREN**

**WARNING**

May be harmful if swallowed  
 May be harmful in contact with skin  
 May be harmful if inhaled  
 Causes serious eye irritation  
 Causes skin irritation



NET CONTENTS: 2.5 gals. (9.46 L)  
 WEIGHT PER GAL.: 9.9 lbs. (4.35 kg)  
 NET WEIGHT: 24 lbs. (1 kg)

SN 0315/0815G

Information about the components of this lot of fertilizer may be obtained by writing to Helena Chemical Company, 225 Schilling Boulevard, Suite 300, Collierville, TN 38017 and giving the lot number which is found on the container.

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.htm>

F224

**MANUFACTURED FOR**  
**HELENA CHEMICAL COMPANY**  
 225 SCHILLING BOULEVARD, SUITE 300  
 COLLIERVILLE, TN 38017  
 901-761-0050

**PRECAUTIONARY STATEMENTS**

**HAZARDS TO HUMANS AND DOMESTIC ANIMALS**

**WARNING**

**BEFORE USING THIS PRODUCT, READ ALL PRECAUTIONS, DIRECTIONS FOR USE, CONDITIONS OF SALE-LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES.**

May be harmful if swallowed. May be harmful in contact with skin. May be harmful if inhaled. Causes serious eye irritation. Causes skin irritation. Avoid eye contact with formulated product. Do not take internally. Avoid contact with or inhalation of the spray mist. If product is being mixed with pesticides and/or spray adjuvants, follow all precautionary statements on the accompanying product(s) labeling.

**Personal Protective Equipment (PPE):** Wear protective eyewear (goggles or face shield), chemical-resistant gloves, long-sleeved shirt and long pants, and shoes plus socks when using this product. Take off any contaminated clothing and wash before reuse.

**FIRST AID**

<b>IF SWALLOWED:</b>	<ul style="list-style-type: none"> <li>Give large amounts of water and get medical attention immediately.</li> <li>If vomiting occurs, keep head lower than hips to prevent aspiration.</li> </ul>
<b>IF IN EYES:</b>	<ul style="list-style-type: none"> <li>Wash eyes immediately with large amounts of water.</li> <li>Get medical attention if irritation persists.</li> </ul>
<b>IF ON SKIN:</b>	<ul style="list-style-type: none"> <li>Remove contaminated clothing and wash exposed area with large amounts of water.</li> <li>Obtain medical attention if irritation persists.</li> </ul>

**Disclaimer:** Always refer to the label on the product before using Helena or any other product.

<b>IF INHALED:</b>	<ul style="list-style-type: none"> <li>Move person to fresh air and obtain medical attention if irritation persists.</li> </ul>
If there is contact made with the spray solution containing pesticides, follow the "Statement of Practical Treatment/First Aid" on the pesticide label.	

**STORAGE AND DISPOSAL**

Keep container tightly closed and do not allow water to be introduced into it. Store in a dry place. Temperatures below 25°F may result in product crystallization. The product will readily reconstitute, however, with warmer temperatures and gentle agitation of the container.

Do not contaminate water sources by cleaning of equipment or disposal of spray waste. Dispose of empty containers by triple rinsing with detergent solution or puncture and discard empty containers in a landfill in accordance with current local, state, and federal regulations.

**GENERAL INFORMATION**

**LIQUID CHISEL®** is a proprietary blend of soil conditioning agents and potash. It is useful in managing the soluble salts that affect plant performance by helping keep the net movement of salts dispersed downward away from the soil surrounding the rooting zone. **LIQUID CHISEL®** is also effective in mitigating soil wetting problems due to compaction or crusting. **LIQUID CHISEL®** is also a concentrated water based solution of potash useful in the correction of plant nutritional deficiencies. In addition, **LIQUID CHISEL®** contains line cleaning agent that can solubilize salt and calcite deposits in spray application equipment and irrigation lines. This product is designed specifically for soil applications.

The salinity of irrigation water is reported as electrical conductivity (ECe). Depending on the source, the amount of salt in irrigation water can vary considerably. Salts accumulate in soil through the application of saline irrigation water, use of fertilizers and other means. A tremendous amount of salt can be carried in irrigation water. For example, one part per million (ppm) of salt in one acre foot of water weighs approximately 2.72 pounds. Therefore, using 3.5 acre feet of 500 ppm total dissolved solid content (TDS) water to irrigate an acre of trees results in the deposition of over 4,700 pounds of salt. Plants extract water and leave most of the salt behind. Over a period of time, this salt concentrates in the root zone of crops. Water and salts will move up through the soil profile due to evapo-transpiration unless there is adequate leaching or drainage. To keep salt levels manageable, it is essential to keep the net movement of water and salt downward through the soil profile.

**APPLICATION**

**LIQUID CHISEL®** can be applied in a wide variety of ways. This includes its use through furrow, flood, micro-jet, sprinkler jet and other irrigation systems. It can also be applied in conjunction with most types of liquid fertilizer. In addition, it can be applied as a soil spray. When metering **LIQUID CHISEL®** directly into an irrigation system by means of a metering injection pump or suction regulated line, do not connect to an irrigation system used for chemical applications or directly to a public water system without a back siphon prevention system in place. Always connect to such systems in accordance with local and/or state regulations.

**LIQUID CHISEL®** can also be used to reduce calcite deposits that contribute to algae growth in irrigation or water tubing.

**DIRECTIONS FOR USE**

The best results from using **LIQUID CHISEL®** are usually achieved utilizing multiple applications. These applications should be made in the pre-irrigation and/or germination stages of plant growth. A pre-irrigation and/or soil leaching program is recommended prior to the application of **LIQUID CHISEL®**. The use of **LIQUID CHISEL®** will help diminish the effect of salts on many plant species including weeds and grasses. Therefore, a sound herbicide program is essential.

**APPLICATION RATES AND MIXING GUIDE**

**APPLICATION RATES:**

**For Use as a Soil Conditioner:**

The rate will vary depending on several factors. These factors include, but are not limited to, the following:

- Initial salinity of soil,
  - Initial salinity of water source,
  - The sensitivity of tolerance of the crop or plants to salts,
  - The stage of plant growth, frequency and type of irrigation,
  - Type of application (i.e. band, furrow, broadcast) and others.
- In general use the following rates for broadcast applications:
- |   |   |
|---|---|
| Problem soils and water with sensitive or moderately sensitive plants:              | 4 Qts./Acre/Application, or<br>3 fl. oz./1,000 sq. ft.              |
| Problem soils and water with tolerant or moderately tolerant plants:                | 2 – 3 Qts./Acre/Application, or<br>1.5 – 2 fl. oz./1,000 sq. ft.    |
| Maintenance rates for productive soils with moderately tolerant to tolerant plants: | 1 – 2 Qts./Acre/Application, or<br>0.75 – 1.5 fl. oz./1,000 sq. ft. |

Adjust the rates to match band, in-furrow or other applications and to match the frequency and timing of applications.

**For Use as a Concentrated Potash Solution:**

Application rates for general nutritional use are 2 – 6 gallons per acre based on soil and tissue analysis. For fertilizer application rates suitable for your geographical area or the maximum allowable non-nutrient application rates per acre, consult a trained soil specialist or your local Helena Chemical Company representative.

**For Use as a Line Cleaner:**

If LIQUID CHISEL® is utilized as a line cleaner for removing calcite and salt deposits, the best results are achieved with multiple applications through the equipment.

Application rates of LIQUID CHISEL® for this purpose will vary from 2 – 50 ppm depending on the problem's severity.

For low hardness (0 – 100 ppm Hardness)	
use 2 – 4 ppm	= 0.25 – 0.5 oz/1,000 gallons
For medium hardness (100 – 300 ppm Hardness)	
use 4 – 6 ppm	= 0.5 – 1.0 oz/1,000 gallons
For high hardness (greater than 300 ppm Hardness)	
use 6 – 10 ppm	= 1.0 – 1.5 oz/1,000 gallons

**MIXING**

In any mixing operation LIQUID CHISEL® should be introduced in the following sequence:

1. Water
2. LIQUID CHISEL®
3. Fertilizers or pesticides.\*

\*NOTE: Since LIQUID CHISEL® may result in increased seed germination, it is important to consider weed control. LIQUID CHISEL® improves water infiltration, thus herbicide performance for products that have high soil mobility characteristics may be affected when tank mixed with LIQUID CHISEL®. A jar test to check compatibility between your herbicide and LIQUID CHISEL® should be conducted before tank mixing. Herbicide performance is not affected when applied sequentially with LIQUID CHISEL® or when LIQUID CHISEL® is applied in-furrow. Consult your supplier about the compatibility of LIQUID CHISEL® with fertilizers and pesticides.

**CROPS**

Plants have widely varying responses to soil and water salinity. This can be affected by the life stage of the plant and by soil or foliar applications. In general, plants can be grouped into sensitive, moderately sensitive, moderately tolerant or tolerant based on their sensitivity of tolerance to salt.

Some plants are relatively unaffected by high levels of salinity. These plants are tolerant or moderately tolerant of salinity because they can adjust osmotically to the increased salinity of the soil water largely by accumulating salts absorbed from the soil water. Salts accumulate in the root cells in response to the increased salinity of the soil water. This helps maintain water flow from the soil to the roots. These tolerant to moderately tolerant plants include:

**FIBER AND GRAIN CROPS**

Barley, Cotton, Cowpea, Guar, Kenaf, Oats, Rye, Safflower, Sorghum, Soybean, Sugar Beet, Triticale, Wheat and other fiber and grain crops.

**GRASS AND FORAGE CROPS**

Barley, Bermudagrass, Mountain Brome, Hubam Clover, Sweet Clover, Tall Fescue, Rape, Perennial Ryegrass, Forage Wheat and other grass and forage crops.

**TURFGRASS**

Bermuda, Bent, Ryegrass, Bluegrass, Paspalum, Fescues and other turfgrasses.

**DO NOT APPLY NEAR WATER, STORM DRAINS, OR DRAINAGE DITCHES. DO NOT APPLY IF HEAVY RAIN IS EXPECTED. APPLY THIS PRODUCT ONLY TO YOUR LAWN/GARDEN.**

**VEGETABLE AND FRUIT CROPS**

Artichoke, Asparagus, Red Beet, Zucchini Squash and other vegetable and fruit crops.

**WOODY CROPS**

Date Palm, Fig, Jojoba, Olive, Papaya, Pineapple, Pomegranate and other woody crops.

Some plants can be affected by even moderate levels of salinity in soils and water. Salt tolerance within this group can vary widely. These plants adjust osmotically to increased soil salinity, but by a process different from the tolerant or moderately tolerant plants. Rather than accumulating salts, these plants produce internally some of the chemicals necessary to increase the concentration of constituents in the root cells. These chemicals include sugars and organic acids. This process requires more energy, therefore crop growth and yield are more suppressed. These plants include:

**FIBER AND GRAIN CROPS**

Beans, Corn, Flax, Foxtail Millet, Peanuts, Rice, Sesame, Sugarcane, Sunflower and other fiber and grain crops.

**GRASS AND FORAGE CROPS**

Alfalfa, Bentgrass, Bersam Clover, Ladino Clover, Strawberry Clover, Forage Corn, Forage Cowpea, Oats, Orchard Grass, Rye, Common Vetch and other grass and forage crops.

**VEGETABLE AND FRUIT CROPS**

Bean, Broccoli, Brussels Sprouts, Cabbage, Carrots, Cauliflower, Celery, Sweet Corn, Cucumber, Eggplant, Garlic, Kale, Lettuce, Muskmelon, Okra, Onion, Parsnip, Peas, Pepper, Potato, Pumpkins, Radish, Spinach, Squash, Strawberry, Sweet Potato, Tomato, Turnip, Watermelon and other vegetable and fruit crops.

**WOODY CROPS**

Almond, Apple, Apricot, Avocado, Blackberry, Boysenberry, Castorbean, Sweet Cherry, Currant, Gooseberry, Grape, Grapefruit, Lemon, Lime, Mango, Orange, Passion Fruit, Peach, Pear, Persimmon, Plum, Prune, Raspberry, Tangerine and other woody crops.

**CONDITIONS OF SALE-LIMITED WARRANTY AND LIMITATIONS OF LIABILITY AND REMEDIES**

**Read the Conditions of Sale-Warranty and Limitations of Liability and Remedies before using this product. If the terms are not acceptable, return the product, unopened, and the full purchase price will be refunded.**

This label is believed to be reliable and must be followed carefully. Injury to the crop to which the product is applied may result from the occurrence of extraordinary or unusual weather conditions or the failure to follow the label directions or good application practices, all of which are beyond the control of Helena Chemical Company (the "Company") or seller. In addition, failure to follow label directions may cause injury to crops, animals, man or the environment. The Company warrants that this product conforms to the chemical description on the label and is reasonably fit for the purpose referred to subject to the factors noted above which are beyond the control of the Company. The Company makes no other warranties or representations of any kind, express or implied, concerning the product, including no implied warranty of merchantability or fitness for any particular purpose, and no such warranty shall be implied by law.

The exclusive remedy against the Company for any cause of action relating to the handling or use of this product shall be limited to, at Helena Chemical Company's election, one of the following:

1. Refund of the purchase price paid by buyer or user for product bought, or
2. Replacement of the product used

To the extent allowed by law, the Company shall not be liable and any and all claims against the Company are waived for special, indirect, incidental, or consequential damages or expense of any nature, including, but not limited to, loss of profits or income. The Company and the seller offer this product and the buyer and user accept it, subject to the foregoing conditions of sale and limitation of warranty, liability and remedies.

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