

Unloading Bulk Hopper Cars

Sodium chlorate is unloaded as follows. Add sufficient water to the storage tank to dissolve the contents of the hopper car. (See Figure 2) The water should be heated (130-140 F) since sodium chlorate has a negative heat of solution.

Open the manway cover protecting the jet pipe. This cover is marked for identification. Remove the protective cap on the jet pipe. Connect the recirculating hose to the jet pipe.

Connect the bottom manifold to the unloading transfer pump. Open the necessary valves at the bottom of the car and in the unloading system. Start the two recirculating pumps, so that hot water from the tank is flowing into the jet pipe and that the slurry solution is being pumped back to the tank.

Observe the progress of unloading through the manways. From time to time as necessary, change the direction of the bottom spray by rotating the jet pipe. This can be accomplished simply by changing the position of the unloading hose as it lays on the top of the car. When the

compartment is empty, stop the recirculating pump. Wash down the side walls of the hopper with a small auxiliary stream of fresh water. Transfer the recirculating hose to the jet pipe in the second hopper and repeat the procedure.

When unloading is complete, drain and flush all lines. Be especially careful not to allow spills of chlorate solution. Shut off necessary valves, disconnect the car and close the manway covers preparatory to returning the car by the routing specified.

Precautions in Handling Sodium Chlorate

Sodium chlorate is classified by the I.C.C. as an oxidizing material and is approved for shipment in Olin hopper cars. Many materials catalyze the decomposition of sodium chlorate with release of oxygen. When mixed with organic matter, sulfur, sulfides, powdered metals, phosphorus, ammonium compounds, acids, or any reducing agent, a dangerously combustible mixture may result. Dry substances such as cloth (natural or synthetic fiber), leather, wood and paper, when impregnated with chlorate, are extremely flammable and may be ignited by friction or heat.

Advantages of The Bulk Hopper Car

1. Eight large manways on the top of the car simplify visual inspection of the interior of the car.
2. The level walkway along the broad flat top of the car provides safe footing for the operator.
3. Manual manipulation of the large, cumbersome hose (through which the solution circulates at a rate of 300 gpm) is eliminated. The simple, quick, snap connection to the jet pipe allows the jet to do the job of washing the chlorate crystals from the car without the danger of hoses jerking or bucking in the operator's hands.
4. The smooth, readily accessible surface of the interior

of the car prevents the sodium chlorate from accumulating and making rinsing difficult.

5. The special plastic lining in the car insures that sodium chlorate reaches the customer in its original, uncontaminated state.

6. The vertical jet pipe located directly above the discharge port minimizes troublesome delays in freeing the discharge line from clogged sodium chlorate crystals.

7. Sodium chlorate can be removed at rates up to 100 pounds per minute when a sufficient volume of dissolved solution is fed into the vertical jet pipe. By adjusting the jet pipe, the contents of the compartment can be completely dissolved.

Figure 1. Bulk hopper car showing unloading jet pipe system.

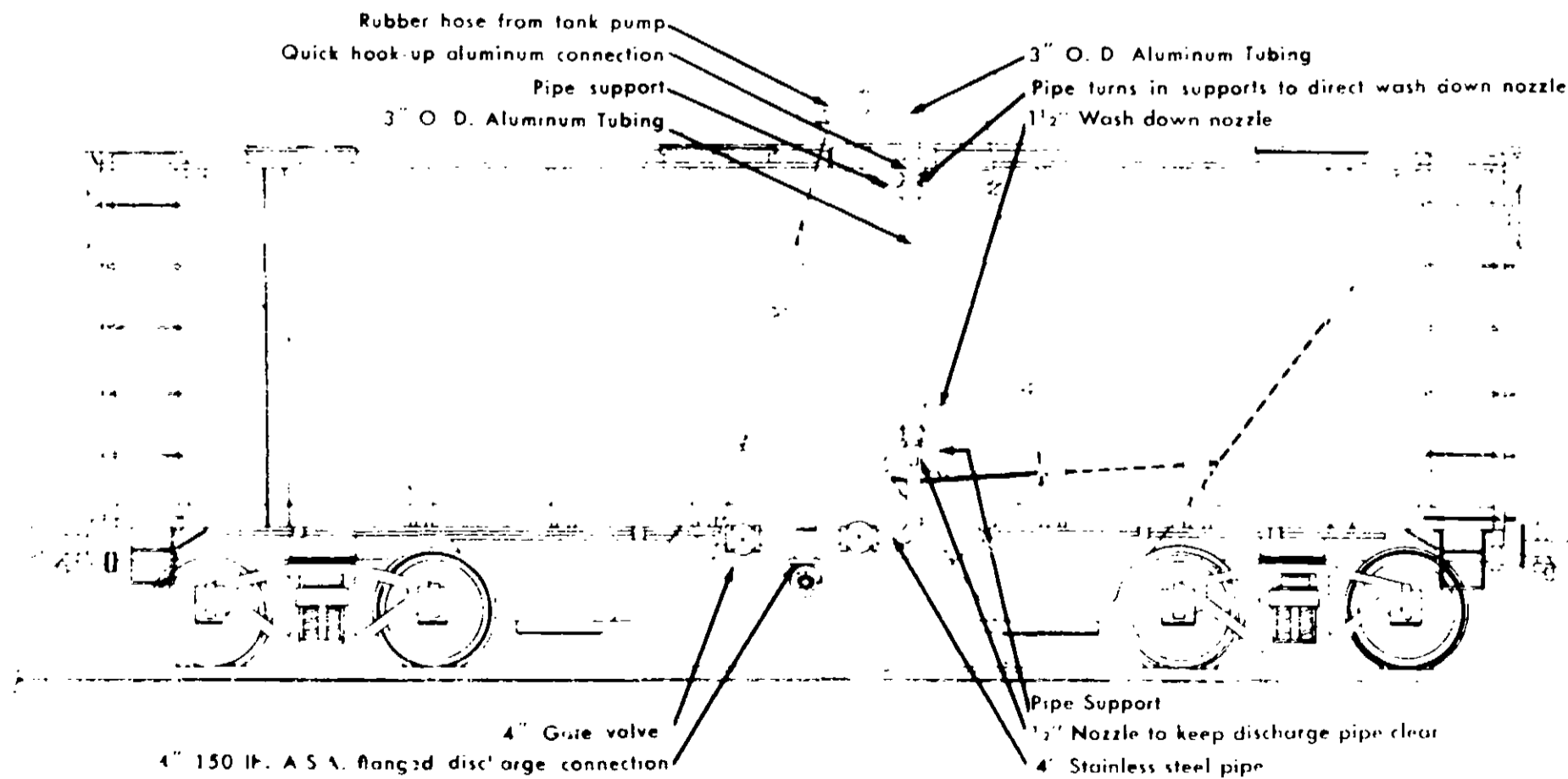
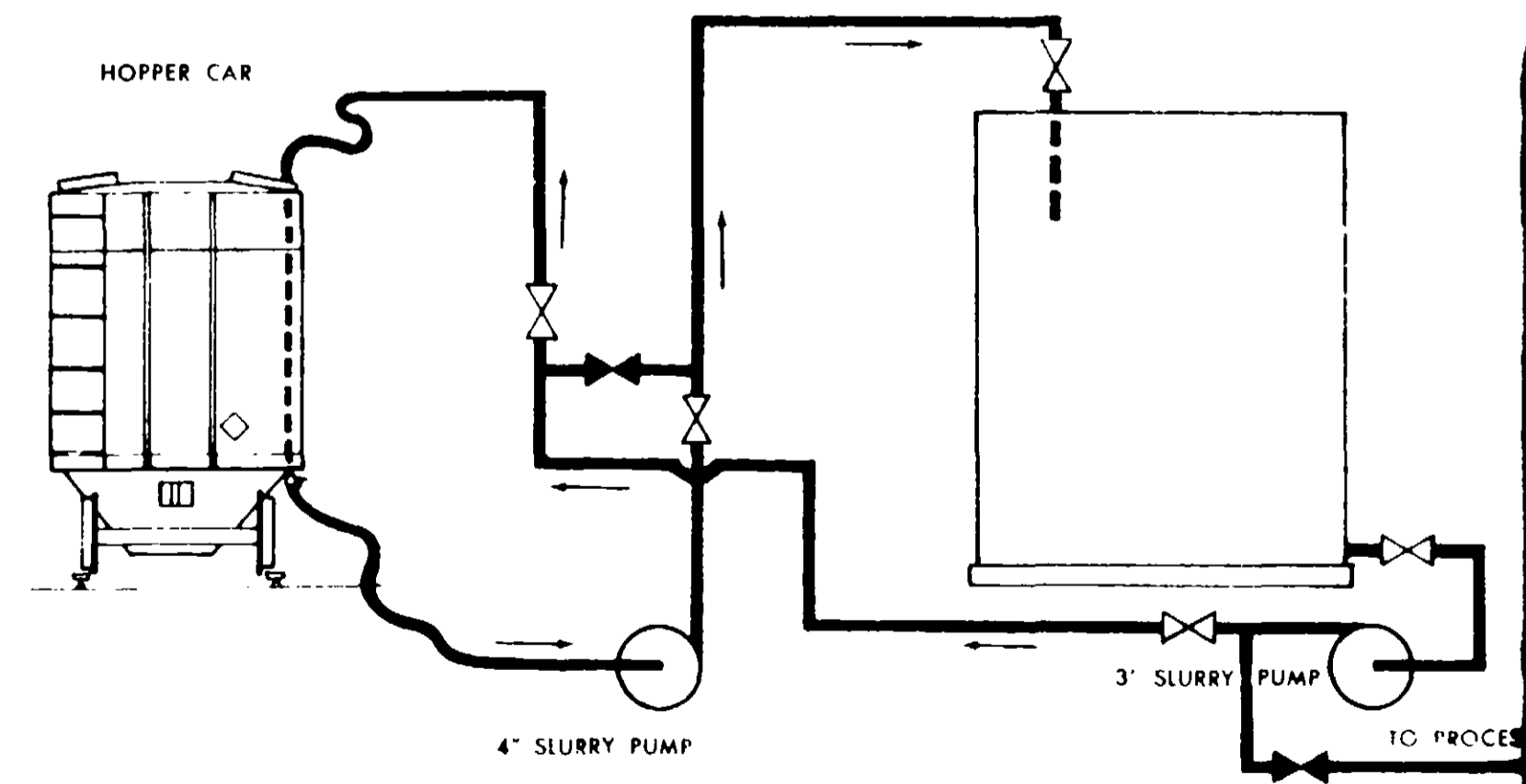


Figure 2. Dual transfer pump unloading system.



Bulk Hopper Cars

Chlorate is unloaded as follows: Add sufficient water to storage tank to dissolve the contents of the car (See Figure 2). The water should be treated with a chemical to raise the pH to a relative heat of 10.

When unloading is complete, drain and flush all lines. Be especially careful not to allow spills of chlorate solution. Shut off necessary valves to disconnect the car and close the manway covers, preparing to return the car by the normal procedure.

Precautions in Handling Sodium Chlorate
Sodium chlorate is classified by the I.C.C. as an oxidizing material and is approved for shipment in 20 ton hopper cars. Many materials catalyze the decomposition of sodium chlorate with release of oxygen. When mixed with organic matter, sulfur sulfides, powdered metals, phosphorus, ammonium nitrate, acids, or any reducing agent, a dangerously combustible mixture may result. Dry substances such as cotton (natural or synthetic fiber), leather, wood and paper, when impregnated with chlorate, are extremely flammable and may be ignited by friction or heat.

of the car prevents the sodium chlorate from accumulating and making rinsing difficult.

bottom manway to the discharge transfer the material to the discharge point of the car. At the end of the unloading system, start the transfer pump and that the water from the tank is pumped back to the storage tank.

progress of unloading through the manways. Stop the transfer pump when the discharge point is reached. The car can be moved simply by changing the position of the unloading system as it is on the top of the car. When the

Advantages of The Bulk Hopper Car

1. Eight large manways on the top of the car simplify visual inspection of the interior of the car.
2. The level walkway along the broad flat top of the car provides safe footing for the operator.
3. Manual manipulation of the large diameter line hose through which the solution circulates at a rate of 300 gpm is eliminated. The simple quick-coupler connection to the jet pipe allows the jet to do the job of washing the chlorate crystals from the car without the danger of hoses jerking or bucking in the operator's hands.
4. The smooth, readily accessible surface of the interior

5. The special plastic lining in the car insures that the sodium chlorate reaches the customer in its original uncontaminated state.
6. The vertical jet pipe located directly above the discharge point minimizes troublesome delays in freeing the discharge point from clogged sodium chlorate crystals.
7. Sodium chlorate can be removed at rates up to 1000 pounds per minute when a sufficient volume of dissolving water is fed into the vertical jet pipe. By adjusting the jet pipe, the contents of the compartment can be completely dissolved.

Figure 1 Bulk hopper car showing unloading jet pipe system.

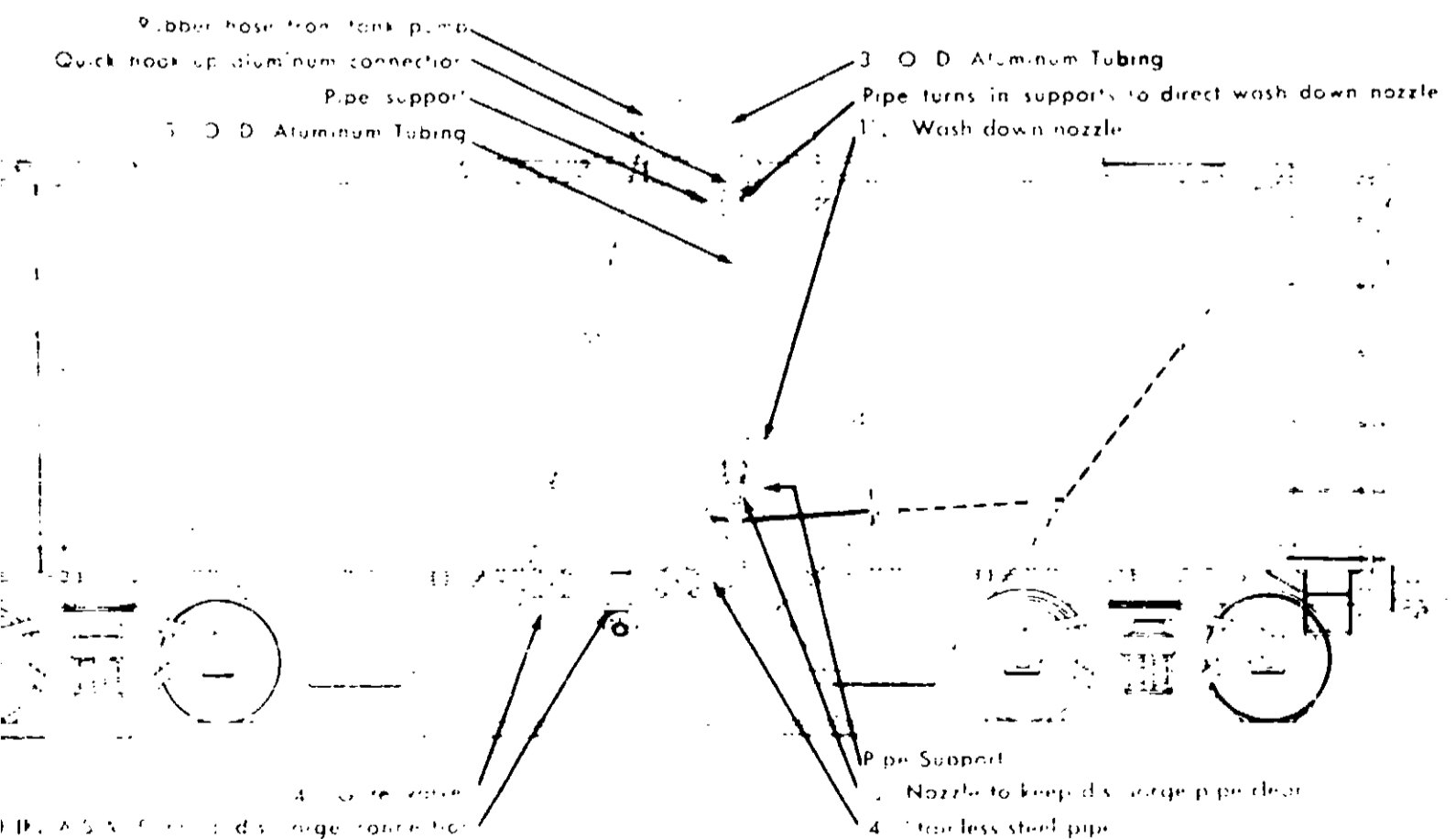
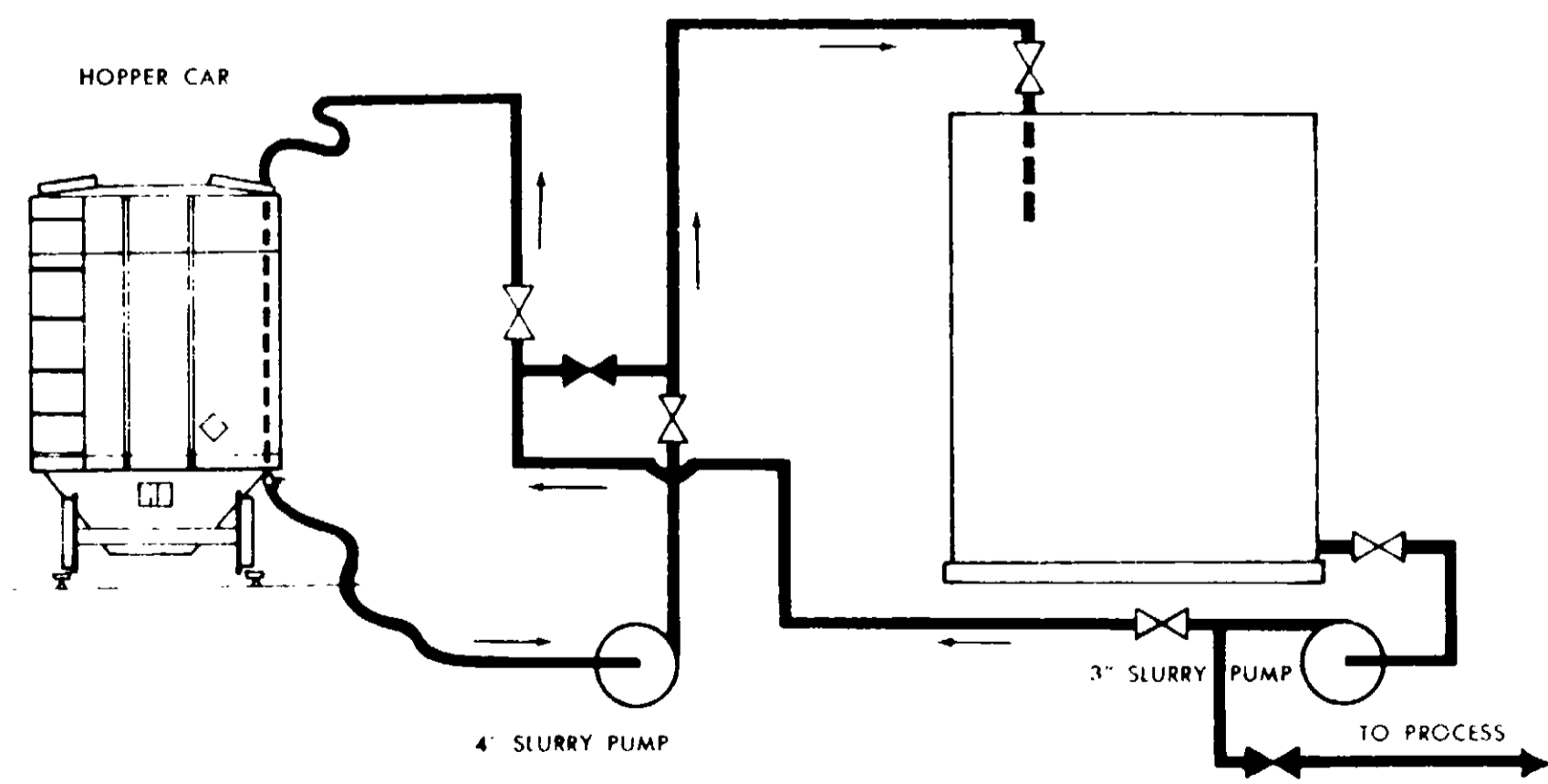


Figure 2 Dual transfer pump unloading system.



The Olin system of generating chlorine dioxide is used in many pulp mills in the United States and Canada. Highly qualified technical service is ready to assist consumers of sodium chlorate in the design and startup of ClO₂ bleaching systems. This type of technical assistance is also available for sodium chlorate bulk handling and storage systems. Contact your Chemicals Division district sales office or write.

OLIN CORPORATION
CHEMICALS DIVISION, 120 LONG RIDGE ROAD, STAMFORD, CONN. 06904

Technical service and sales agents for Penn-Olin Chemical Company

District Sales Offices

Atlanta, Ga. 30309—1720 Peachtree St. N.W. (404) 875-8936
Charlotte, N.C. 28202—Baugh Bldg. (704) 333-1175
Cincinnati, O. 45237—8075 Reading Rd. (513) 761-7112
Hinsdale, Ill. 60521—120 E. Ogden Ave. (312) 325-2280
Houston, Tex. 77006—3015 Richmond Ave. (713) JA 6-2761
King of Prussia, Pa. 19406—210 Goddard Blvd. (215) 265-0900

New Orleans, La. 70130—1055 St. Charles Ave. (504) 529-5557
New York, N.Y. 10022—280 Park Ave. (212) 572-3471
Providence, R.I. 02903—Hospital Trust Bldg. (401) GA 1-2070
Shaker Heights, O. 44120—3570 Warrensville Ctr. Rd. (216) 752-0088
St. Louis, Mo. 63144—2025 S. Brentwood Blvd. (314) 968-3930
Whittier, Calif. 90602—13215 E. Penn St. (213) 945-1063

 **lin CHEMICALS**

No warranty, expressed or implied, is made except that the product conforms to Olin's specifications. The technical data furnished is believed to be accurate and complete. Buyer assumes all risk of use, storage, and handling of this product. Olin shall not be responsible for special or consequential damages. Nothing contained herein shall be construed as a permission or recommendation for the use of the product in the infringement of any existing patent.

AD-1157 (4-169)

Printed in U.S.A.

Sodium Chlorate Weed Killer Solution

ACTIVE INGREDIENT: Sodium Chlorate. 26.3%
INERT INGREDIENTS: 73.7%

CONTAINS 3 LBS. OF SODIUM CHLORATE AND 1.8 LBS. OF CALCIUM CHLORIDE PER GAL. AT 70°F.

CAUTION:

KEEP OUT OF REACH OF CHILDREN.

HARMFUL IF SWALLOWED

May cause irritation of skin, eyes, nose and throat. Do not get in eyes, on skin or on clothing. Avoid inhalation of spray. Strong oxidizer. In case of leak or spill, flood with water. Do not spray on food crops. Avoid spray drift to desirable plants. Do not contaminate water used for irrigation or domestic purposes.

DIRECTIONS FOR USE IN RAILROAD AREA ONLY: For the control of weeds such as Canada Thistle, Bindweed, Johnson Grass, Crab Grass, dilute Sodium Chlorate Weed Killer Solution with water at the rate of one gallon to five gallons of water and spray weeds thoroughly. Repeat application if necessary.

Note: Wash car thoroughly with water after use.

NET 10,000 GALS.

USDA Reg. No. 1258-906

 **CHIMICALS**

OSCWKS 1271

OLIN CORPORATION

120 LONG RIDGE ROAD, STAMFORD, CONNECTICUT 06904

ACCEPTED
Aug-24 1971
1258-906
TO ATTACHED COMMENTS.