# cost-of-use analysis for : DISHWASHING DETERGENT

## 1 WATER USED TO DISPENSE PRODUCT:

| U S CHEMICAL | Competitor |
|---|---|
| 2 x 1.5 gal. | 36 lb. case |
| 0 gal. used | 17.1 gal. used per lb.* |

## 2 WATER USED PER CASE TO DISPENSE PRODUCT:

| U S CHEMICAL | Competitor |
|---|---|
| (A) = 0 gal. per case | (B) = 36 lb. x 17.1 = 615.6 gal. |

## 3 MICROTECH VS. EXCESS GALLONS OF WATER TO DISPENSE SOLID:

| (A) | - | (B) | = | Excess |
|---|---|---|---|---|
| 0 | - | 615.6 | = | 615.6 |

## 4 COST TO HEAT WATER USED IN DISPENSING PRODUCT TO WASH TANK:

| | | |
|---|---|---|
| | 8.33 | Pounds = Weight of 1 gal. of water |
| Times | 75 | Degree rise (60 incoming raised to 135) |
| Equals | 624.75 | BTU's required per gallon |
| Divided | 3413 | BTU conversion factor to kWh |
| Equals | 0.183050103 | kWh |
| Times | 0.21 | National average cost per kWh** |
| Equals | $ 0.0384 | Cost per gallon for 60 degree rise |
| Times | 615.6 | Excess gallons consumed |
| Equals | $ 23.66 | **(C)** Excess cost for heating transport water |

## 5 COST TO HEAT DISPENSE WATER IN WASH TANK:

| | | |
|---|---|---|
| | 8.33 | Pounds = Weight of 1 gal. of water |
| Times | 25 | Degree rise (135 incoming raised to 160) |
| Equals | 208.25 | BTU's required per gallon |
| Divided | 3413 | BTU conversion factor to kWh |
| Equals | 0.061016701 | kWh |
| Times | 0.21 | National average cost per kWh |
| Equals | $ 0.0128 | Cost per gallon for 25 degree rise |
| Times | 615.6 | Excess gallons consumed |
| Equals | $ 7.89 | **(D)** Excess cost for heating transport water in wash tank |

## 6 COST OF WATER USED TO TRANSPORT DETERGENT:

National average cost for water per 1000 CF (cubic feet) is: $ 15.00
National average cost for sewage per 1000 CF (cubic feet) is: $1.50
Conversion factor for CF to gallons is 0.13368

**615.6 x 0.13368 = 82.293408**
**82.293408 / 1000 x 3 =** cost of transport water
**(E) $0.25 = cost of transport water**

## 7 TOTAL ADDITIONAL COST TO DISPENSE A CASE OF SOLID DETERGENT:

| Electric | + | Wash tank electric | + | Water cost | = | Total additional cost |
|---|---|---|---|---|---|---|
| (C) | | (D) | | (E) | | |
| $ 23.66 | + | $ 7.89 | + | $ 0.25 | = | **$ 31.80** |

* All examples shown are based upon actual laboratory conditions of constant water pressure and constant water temperatures.

** Actual electric, water and sewage rates vary. Use of the actual rate for each utility in your area to provide an accurate picture of the conditions in a case. Actual costs could be significantly higher…and the savings could be much greater.

U S Chemical

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