



## Water and VOC Recovery

- 1.35 million pounds of water per month is removed during evaporation and drying
- Volatile flavors evaporate with the water and need to be collected and reintroduced during agglomeration
- Water leaves the process as steam or water vapor and is recovered by condensation
- Pervaporation is a membrane separation technique to remove volatile organic compounds from liquids
- Recovered water is used for plant sanitation, steam generation, and as process water

## Market Analysis and Packaging

- The market for shelf-stable microwavable entrees totaled \$2.4 billion in sales in 2004
- New products in this area generally capture 1% - 5% of the market, we are aiming to capture 2% of the market
- Packaged in a 12.9 oz. box containing six 2.15 oz. individual serving packages
- Each individual serving contains 1.65 oz. of noodles and 0.5 oz of dehydrated sauce
- Product will also be available in bulk containers for industrial uses

## Raw ingredients for a 100 gallon batch of tomato sauce

	total (kg)
Olive oil	24.3
Yellow onion	24.9
Chopped garlic	68.0
Plum tomatoes, coarsely copped	1587.6
Tomato puree	136.0
Water	568.8
Basil leaves, sweet dry	28.3
Oregano leaves, dry crushed	28.3
Parsley, dry	39.6
Red chilies, crushed	14.1
Granulated garlic	14.1
Black Pepper	17.0
Kosher salt	14.1



## Quality Assurance and Plant Safety

- Finished powder needs to be tested for color, water activity, viscosity, and taste
- Microbial concerns are minor for products with low water activity, but the powder will be tested for *Salmonella*
- Control points are metal detection before packaging, and water activity testing after drying
- A hold/release will be used for failed product and tracking labels will be attached to every pallet
- Air flow needs to reduce air flowing through the building to minimize travel of dust particles, and fine dust particles will be removed from the air