

Industrial Uses of Propane

Propane is more than just outdoor grills. Within the commercial, industrial, and agricultural sectors are many markets in which propane gas is being used. In fact, there are **hundreds of uses of propane**, as this list reveals:

Agricultural Drying

Sweet potato dehydrating
Hay dryers
Soybean dryers
Peanut dryers (peanuts in shell)
Corn dryers
Tobacco dryers

Air Heating

Dissipating steam vapors
Make-up air systems
Space heating
Sterilizing with hot air (other than cotton seed sterilizing)

Asphalt Melting *(including tar, pitch, and similar materials)*

Under fired tanks for kettles
Tanks or kettles fired with immersion tubes

Bread and Pastry Baking *(including crackers, cookies, cakes, pies, etc.)*

“Peel” ovens: direct and indirect brick-set types;
portable sheet metal types
Continuous “band” ovens (including long horizontal “traveler” types)
Rotary hearth ovens
“Traveller” ovens (close-coupled type, including small reel types)
Vertical reel type ovens

Boiler Firing – Fire Tube Boilers

HRT boilers with long or short firebox or settings
Scotch marine boilers
Package boilers
Oil fields or locomotive-type boilers
Vertical fire tube boilers – large (usually waste heat)
Cast iron sectional boilers
Small vertical boilers (pressing and cleaners, etc.)
Special pilot and safety device arrangements

Brick Yard Applications *(Brick, sewer tile, etc.)*

Round down-draft kilns (“beehive” type)
Box type kiln (flower pots, etc.)
Continuous kilns (including tunnel and progressive kilns)
Dry kilns for brick or tile

Car Thawing

Other than ore thawing

Ceramic Applications *(other than brick yard, glass-house, and vitreous enameling)*

Pottery kilns
Decorative tile kilns
Pottery mould drying

Chemical Plant Applications

Reverberatory furnaces

Clay Drying in Continuous Ovens and

Towers *(including mould baking ovens and shell mould ovens)*

Drawer type core ovens
Car and rack type core ovens
Continuous core ovens (vertical type)
Shell mould drying ovens

Cotton Dryers *(including cotton seed sterilizers)*

“Pull-through” heaters
Cotton seed sterilizers

Deep Fat Frying *(potato chips, etc.)*

Under-fired deep fat kettles
Deep fat kettles fired with immersion tubes, and immersion tubes and recirculation

Die Casting

Die casting pots (including “goose-neck” heaters)
Moulding pots for die casting
Patented die casting machines

Direct Flame Applications

Chicken singeing
Armature baking ovens (including coils, windings, etc.)
Soldering by direct flame
Burn-off paint and other combustibles (from conveyer fixtures, scrap metal, etc.)
“Flame curtain” burners for doors of furnaces (usually large)

Drying, Baking and Curing (*miscellaneous applications*)

Armature baking ovens (including coils, windings, etc.)
Asphalt drying (after coating pipe, roofing paper, etc.)
Candy drying (including candy corn)
Carbon baking
Cement block or cinder block curing rooms
Chemical dryers or dehydrators (including heavy industrial chemicals)
Coating drying inside vessels (including brewery vats, tank cars, etc.)
Cork products drying
Felt products drying (hats, etc.)
Gasket curing ovens (including brake linings)
Line baking on wires or rods
Lumber drying kilns
Leather drying or curing
Melting kilns and malt ovens
Pecan dryers
Pharmaceutical drying (including fine chemicals)
Plastic curing ovens
Rubber products curing
Salt dryers and evaporators
Sludge dehydration (brewery slops, sewage waste, etc.)

Drying After Washing (*not including dry-off or burn-off ovens in industrial finishing systems*)

Barrel and drum drying
Leather drying
Metal parts drying in box-type, conveyor, tumbler, or rotary ovens
Rug and carpet drying
Laundry dryers

Egg and Milk Dryers

Powdered eggs, coffee and milk dryers

Floor Mould Drying (*including ingot moulds*)

Drying floor moulds with air heaters and direct firing

Forging – Brass and Aluminum

Continuous furnaces (usually fired with recirculating air heater)

Forging—Steel

Standard box-type forge furnaces
End-heating box-type forge furnaces (including brass drum furnaces, over-and-under fired slot forges and others that have no hearth)
Rotary hearth forge furnaces
High-temperature welding forges (2800 degrees and up)
Ingot forges for heating single large ingots
Continuous pusher-type or walking beam forge furnaces
“Drag” furnaces
Small utility forges (including smith’s forges)
Rivet forges

Galvanizing

Galvanizing kettles (all types)

Glass Bead Fusion Towers**Glass House Applications—Melting**

Day tanks
Continuous direct-fired tanks, non-regenerative
“Deep-eye” pot furnaces
Standby oil burners on regenerative furnaces (including revolving pots)
Continuous direct-fired regenerative
Feeders and forehearths (including fiberglass “noses”)
Special reverberatory furnaces

Glass House Applications—Lehrs

Annealing lehrs
Decorating lehrs
Plate glass or window glass lehrs

Glass House Applications—Miscellaneous

Continuous glazing or fire polishing
Glory holes
Mould preheating ovens
Glass wool curing ovens (including fiberglass curing)
Glass bending

Grain Dryers

Rice dryers
Corn and seed dryers: tower, rotary drum and small portable types

Gypsum and Fiber Board Ovens (*including gypsum block and roofing*)

All types of continuous ovens for drying gypsum, fiberboard shingles, etc.)

Heat Treating (*direct-fired furnaces or ovens not using recirculating fans or special atmospheres*)

Oven or box type furnaces
Continuous annealing or normalizing furnaces
Alloy link-belt or wire-belt conveyor-type furnaces for lighter products
Roller-hearth, walking beam, or pusher-type furnaces for heavier products
Car-type annealing or normalizing furnaces used in forge plants, foundaries and steel mills, and for malleable annealing, curbing for cycle annealing, spheroidizing and homogenizing of large parts
Lead hardening parts and salt baths (including cyanide)
Molten lead, cyanide, or special salts heated in iron, steel, or alloy pots
Rapid-heating-before-queching or miscellaneous steel parts to carburize and/or harden surface of parts after machining
Wire patenting
Incinerators
Crematories
Fume and smoke incinerators

Ladle Drying and Preserving

Foundry ladles (including hand, bull, and mixing ladles, etc.)
Large steel mill ladles (including bull and mixing ladles, etc.)

Lead Processing Applications

Lithograph Ovens—Tinplate

Large continuous ovens for lithographing cans, closures, etc. (including coating ovens)

Low Temperature Melting (*in tanks or kettles not including asphalt melting or varnish cooking*)

Wax melting kettles
Grease kettles
Candy kettles
Rendering vats

Metal Melting—Crucible Furnaces

Stationary crucible furnaces (including pit types) for melting brass, bronze, aluminum, monel, etc.
Tilting crucible furnaces for melting brass, bronze, aluminum, monel, etc.
Jewelers' furnace (including assay furnaces)
Small crucibles for melting gold and silver
Crucible retorts with special hoods for melting highly volatile metals

Metal Melting—Iron or Alloy Steel Pots or Kettles (*not including diecasting, galvanizing, wire patenting or heat treating or lead hardening*)

Aluminum melting in pots or kettles
Magnesium melting
Lead, antimony, tin and zinc melting pots for melting only, not coating
Tin pots and lead coating pots
Flux tanks
Stereotype pots in newspaper offices

Metal Melting—Reverberatory Furnaces

(*including smelting and refining*)
Tilting open-flame melting furnaces for brass, monel, nickel, etc., and sometimes special iron or steel alloys
Box-shaped reverberatory melting furnaces for lead, tin, aluminum, die-casting, metal, zinc, etc.
Large direct-fired "air furnaces" or open hearths (non-regenerative type) used for making malleable iron, smelting nickel ore, etc.
"Sweating" furnaces for separating metals of different melting points

Metal Melting—Special Applications

Molding ladles and furnaces (not including die casting)
Cupola forehearths in iron foundaries

Miscellaneous

Asphalt cooking still (vertical tube type)
Bone charring retort (filter charcoal)
Carbon black applications
Crematorium for mortuaries
High-temperature cement kilns
Cupola lighting
Gypsum cooking kettles (including calcining kettles)
Hog singeing
Ice cream cone machines
Laboratory hot plates
Line heaters (pipeline regulator stations)
Piloting large boiler burners
Pimento roasting
Rock heating for steam bath
Rock wool melting furnaces (reverberatory)
Roll heating (roofing machinery rolls, paper mill rolls, etc.)
Sewage gas disposal
Small utility furnaces for miscellaneous heating of small shapes
Verticle lime kilns (both slip and stick kilns)

Paint Drying—Batch Type Ovens (*including japanning, etc., and spring tempering*)
Paint drying with single-flow and recirculating air heaters

Paper Products Drying (*not including press applications*)
Batch-type ovens for paper plates, postage stamps, etc.
Continuous ovens for blueprint paper, paper toys, etc.

Poultry Brooders
Chicken, turkey and other commercially raised fowl
Burning animal waste

Preheating for Forming (*1600-2000 degrees F.*)
Bending, not forging

Plate and Angle Heating Furnaces (*for shipyards, boiler works, railroad shops, etc.*)
Plate heating furnaces
Angle heating furnaces

Printing Press Applications
Hot air drying of ink on paper, cellophane, glassine, aluminum foil, etc.
Lithograph ovens for paper
Burning off printing rolls

Rotary Dryers and Calciner (*not including rotary drum dryers for metal parts*)
Rotary sand, gravel, or crushed stone dryers
Rotary calcining kilns or dryers (not including cement kilns) used for drying kaolin, fuller's earth, bauxite, kyanite, etc.
Rotary haydite kilns (lightweight aggregates)
High temperature applications (above 220 degrees F.)

Steel Mill Heating Furnaces
Continuous pusher-type
Heating steel for rolling mills
Soaking pits
Billet or slab heating furnaces (including rail heating furnaces)
Rod heating furnaces

Smoke Houses—Meat Processing
Direct-flame smoke house applications used for igniting saw-dust as well as curing meat
Air heater smoke house applications

Soap Drying
Soap towers (large volume drying of soap flakes or powder)
Batch-type soap drying ovens

Solution Heating for Industrial Washing or Cleaning (*using internally-fired immersion tubes*)
Spray washers and industrial washing machines
Caustic, cleaning, or rinse heating in steel tanks (dip tanks)
Acid solution heating
Water quench tanks with immersion tubes (including all applications in which work enters solution at higher temperature than solution)
Solution heating in tanks for circulation through work for cleaning, etc. (other than spray nozzles)

Special Steel Mill Applications
Soaking pits
Slow-cooling pits and furnaces
Sheet mill roll heating
Ore thawing
Sintering beds
Ore roasting (not thawing)

Test Kilns and Fusion Furnaces
High temperature test furnace

Textile Applications
Tenter frames (including tenter dryers)
Tumbler dryer (chenille)
Slashers
Carbonizers
Singeing cloth
Impregnating and coating ovens
Loop dryers (including festoon dryers)
Calendar roll drying

Varnish Kettles
Standard varnish kettles
Special large process units

Vitreous Enameling Applications
Batch-type vitreous
Car-type vitreous enameling furnaces
Frit smelting furnaces
Frit drying
Dry-off oven for vitreous enameling