



QUANTUM SERIES

DOSING GUIDE



HOW TO BREW THE BEST BEER WITH QUANTUM



THE FUTURE OF BREWING IS QUANTUM



BREW WITH THE TRUEST EXPRESSION OF HOPS FLAVOR AND AROMA.

TAKE A REVOLUTIONARY LEAP FORWARD IN BREWING TECHNOLOGY

The **Quantum Series** is the aromatic brewing solution you've been waiting for. Using ultra-low temp extraction technology, we've designed this series of hop-derived, varietal-specific extracts to deliver the finest aromatics with maximum cost-effectiveness and an unheard-of level of efficiency. Simply add Quantum to the cold side and you're done.

From recipe development and production timelines to ingredient sourcing and COGs, the Quantum Series is turning the brewing paradigm on its head. No special labeling requirements, no tank losses, and no cold storage. Just the most aromatic hop extracts on the market, at half the price of T90s. This is the next big thing in brewing.



WHY QUANTUM?

The **Quantum Series** tastes better, performs better, and is easier to use compared to other hop-extracts. No workflow modifications needed, no warming up your extract, and no more scrubbing sticky gunk from your equipment.

Quantum also has a clear advantage over hops and pellets. In addition to being more shelf stable, they can be used at any stage of the process with a 100% utilization rate while reducing shipping and storage costs by an order of magnitude. Plus, let's not forget the labor savings from not having to lug around boxes.

Water-soluble and flowable above freezing, Quantum extracts immediately disperse into your solution with nothing to soak up beer and no yield loss. With Quantum, brewing better-tasting beer doesn't have to be so hard.



Flavor Comes First

Compare these to the flavor of other extracts and it's like night and day.



100% Utilization Rate

Quantum is immediately dispersed into solution. Less wait, more beer.



Logistical Cost Savings

Quantum weighs less, costs less to ship, and takes up less space.



No Yield Loss

Quantum is a liquid so there is nothing to soak up potential beer.



Way Less Expensive

Compare the price of Quantum to T90, whole hops, and other extracts.



No Special Handling

Easily flowable at cool, ambient, and warm temperatures. Seriously.



Built Entirely for Aroma

There are no acids in Quantum. These are built entirely for aroma.



True-to-Type

Quantum is a varietal-specific and lot-specific hop extract.



Keep Your Workflow

Quantum goes right into your existing workflow with no modifications.



None of the Nasty

No chlorophyll, lipids, or waxes to pollute the delicate flavor/aroma.



Less Waste Water

Sending trub down the drain is literally sending money down the drain.



Better Sustainability

A drastic reduction in total hop material to impart flavor & aroma.



Clean Finished Label

Use "hops oil" on your ingredient list. No natural flavors claim needed.



Zero Hop Creep

Quantum won't impart any hop creep or cause lightstruck off-flavors.



Simple Storage

Quantum comes in lightproof bottles with no need to refrigerate.



Increased Shelf Life

We've seen a 30% increase in shelf life due to reduced oxidation.

EASY BENCHTOP DOSING

WANT TO INSTANTLY UNDERSTAND QUANTUM'S FLAVOR IMPACT? THE FLAVORS INCLUDED IN YOUR QUANTUM SAMPLE KIT CAN BE DOSED DIRECTLY INTO PACKAGED BEER OR CARBONATED WATER, SO GET CREATIVE!



Using a micropipette, start benchtop experiments with a 0.25 oz/bbl dosing rate (0.065 mL/L).



Put more simply, try one drop per pint to start. In practice, brewers have used dosing rates between 0.3 and 1 oz/bbl.



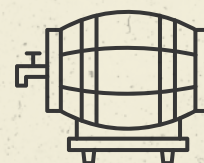
Remember that medium matters! Lagers typically need lower dosing rates while bigger beers may benefit from a bit more.



For best results, dose Quantum into a growler and taste after 48-72 hours to better simulate a dry hop and allow for full integration.



Want to dose your Quantum sample straight into a keg? Dose one of the 5 mL vials from your sample kit, wait a week for full integration, and taste the difference.



HOW TO ADD QUANTUM TO BEER

WITH A DOSING EQUIVALENCY OF 0.5 OZ = 1 LB T90S, QUANTUM CAN REPLACE UP TO 50% OF YOUR COLD-SIDE HOPPING BILL.

MEASURE

Depending on your dosing technique, measure or weigh the required amount into a jug or beaker. When dosing by weight, Quantum extracts have an average density of around 1.002 g/mL.



FLUSH WITH CO2

Begin purging your headspace or dosing vessel with CO2 to reduce oxygen ingress.



ADD TO TANK

We recommend adding Quantum during your regular dry hop to replicate your standard dry hop aromatic profile and minimize production disruption. However, Quantum can also be employed at brite tank to add extra amplitude to an underwhelming beer, or even added to individual kegs as special editions for taproom events or festivals.



HOMOGENIZE

While Quantum disperses quickly, recirculate or rouse your tank to ensure homogenization.



QUANTUM FAQs



READ MORE FAQs



DO QUANTUM EXTRACTS REQUIRE SPECIAL HANDLING?

No. Add Quantum during your regular dry hop without any workflow changes. Although it is water-soluble and dissipates immediately, Quantum benefits from a residency time of 3-5 days for full integration. Reminder, there's no need to warm them up before use since Quantum is flowable above freezing temperatures.



HOW DOES QUANTUM OFFER ADDITIONAL COST SAVINGS?

In addition to being more affordable compared to T90, whole hops, and other extracts, Quantum's logistical costs are reduced by an order of magnitude. Quantum weighs less, costs less to ship, takes up less space, and has no yield loss. That means reduced shipping and storage costs, labor savings, and increased beer output. Plus, we've seen a 30% increase in shelf life, which means selling more beer and saving on buybacks.



DOES QUANTUM HAVE THE SAME AROMA TRANSFER AS T90?

The Quantum Series has a 100% efficient aroma transfer. While you can never be certain of how much flavor and aroma will be imparted into the beer when using hops or pellets, Quantum extracts are flowable liquids that disperse immediately and completely. Just add to your brite tank and get immediate aroma.



CAN I DOSE WITH QUANTUM EARLY IN THE FERMENT?

Yes! Quantum is 100% water soluble and micro-stable, and so presents the opportunity to dose at any point in your cold side process. We have seen the best results for flavor matching when Quantum is dosed at the same time as your standard dry hop, but there is room to experiment with dosing earlier or later in the process to promote biotransformation or to dose-to-taste in your brite tank. Our recommendation for experimentation is always to start small and build on success! If you're adding pre-ferment, don't add more than 1 oz/bbl.



HOW DOES QUANTUM COMPARE TO OTHER HOP EXTRACTS ON THE MARKET?

Quantum is only comparable to other advanced hop products in that they are both derived from hops. Outside of that, Quantum is higher amplitude, more efficient, and more cost-effective than anything else in the advanced products category.



HOW DOES QUANTUM PROMOTE BREWING EFFICIENCY AND SUSTAINABILITY?

Quantum provides a truly remarkable reduction in the environmental footprint needed for hop products. Our extraction methods promote reduced water and land use for farmers, and our minimal packaging and lighter shipping weights contribute to lower CO2 emissions. Plus, not needing to refrigerate before opening reduces the demand for cooling resources.



CAN YOU PROCESS MY HOPS?

Yes, we'd love to! We can process as little as 132lbs of your favorite T90 or concentrated hop pellets with no upper limit. Extend your shelf life, increase your flavor/aroma, and dramatically increase the efficiency of what you already own. Flavor lock is no longer a challenge because it's YOUR HOPS.



CAN I ADD QUANTUM TO SELTZERS AND OTHER NON-BEER BEVERAGES?

Absolutely! Quantum offers craft beverage creators a chance to push boundaries. Perfect for hop waters, seltzers, and non-alcoholic beers, Quantum unlocks new possibilities in flavor, allowing you to offer something truly unique. Contact us and we'll walk you through it.

WHAT BREWERS ARE SAYING ABOUT QUANTUM

"The Quantum Series from Abstrax absolutely rules. The hop aroma and flavor are unbelievable. I haven't found any other hop product that produces such a pure bright hop expression. The cost savings are also a great bonus, but I'm far more excited about how fun the flavors are to play with."

Tyler Thurman

Head Brewer | Highland Park Brewery

WHOLE HOPS OR PELLETS

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OTHER DRY HOP AROMA OILS

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QUANTUM SERIES

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- Simple Dosing
- No Yield Loss from Absorption
- Zero Undesirable Plant Compounds
- Doesn't Stick to the Tank
- Requires No Carriers
- Can Be Used At Room Temperature
- No "Hop Creep"
- No Solid Waste Removal
- Requires No Refrigeration

MORE QUESTIONS?

We're happy to talk all things hops, brewing, and terp-related!
Reach out to us at hello@abstraxhops.com and brew your next batch
of beer with the brightest varietal-specific expression of hops.



