

# Operating Instructions

## Ethylene Generator

### Model: CITRUS (120V only)



MAIN OFFICE & PRODUCTION FACILITY:

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#### OPERATING INSTRUCTIONS

- Place generator inside ripening/degreening/storage room, a minimum of 0.3 meters (1 foot) away from and not directly above mains electrical outlet, in a convenient and protected area free from traffic of pallet jacks and lifts.
- With power OFF and generator disconnected from electrical outlet, open reservoir cover, pour in up to 2 quarts of Ethy-Gen® II Ripening Concentrate, and close cover (Do not overfill; reservoir capacity is 2.0 Quarts).
- Plug generator into a properly grounded mains electrical outlet of correct voltage.
- Select an Ethy-Gen II to ethylene conversion setting by using the chart below and rotate switch located on front panel (NOTE: these settings are for ≤10 ppm ethylene; if you require different ppm levels, contact us. See other important notes below concerning ethylene levels produced):

APPROXIMATE ROOM SIZE IN FT <sup>3</sup> (M <sup>3</sup> )	CONVERSION SETTING*	HOURS REQUIRED TO CONVERT ONE QUART
5500 (150)	1	172
7000 (200)	2	140
8000 (225)	3	120
9000 (250)	4	108
10000 (300)	5	96
12500 (350)	6	84
15000 (425)	7	72
17500 (500)	8	60

- Turn generator ON when ready to use.
- Follow proven ripening/degreening/storage procedures, with generator on and ETHY-GEN® II in reservoir.
- Turn generator OFF when ethylene application is complete.

#### IMPORTANT NOTES CONCERNING ETHYLENE LEVELS:

- \*ROOM TIGHTNESS WILL AFFECT HOW MUCH OF THE ETHYLENE PRODUCED WILL REMAIN IN ROOM AND THE RESULTING ETHYLENE PART PER MILLION (PPM) LEVEL. THEREFORE THE SETTING USED MAY PRODUCE DIFFERENT PPM LEVELS IN ROOMS OF SIMILAR SIZE.
- BEST PRACTICE IS TO RUN GENERATOR FOR 6 HOURS (PREFERABLY OVERNIGHT) AND MEASURE ETHYLENE LEVEL. THEN ADJUST GENERATOR SETTING AND/OR NUMBER OF GENERATORS ACCORDINGLY.
- FOR ROOMS LARGER THAN 17,500 FT<sup>3</sup> (500 M<sup>3</sup>), ONE GENERATOR MAY CREATE SUFFICIENT ETHYLENE. HOWEVER, IT MAY BE NECESSARY TO ADD ADDITIONAL GENERATORS TO ACHIEVE PROPER ETHYLENE LEVEL. ROOM TIGHTNESS WILL DICTATE RESULTS.



#### WARNING



##### THIS GENERATOR CREATES ETHYLENE (C<sub>2</sub>H<sub>4</sub>). ETHYLENE IS EXPLOSIVE AT 27,000 PPM.

- DO NOT USE GENERATORS IN ENCLOSURES OF LESS THAN 1600 FT<sup>3</sup> (45 M<sup>3</sup>) WITHOUT WRITTEN APPROVAL FROM CATALYTIC GENERATORS, LLC.
- ONLY USE THE NUMBER OF GENERATORS REQUIRED TO MAINTAIN APPROPRIATE ETHYLENE LEVEL. MONITOR ETHYLENE LEVEL AND ADJUST GENERATOR QUANTITY AND SETTINGS ACCORDINGLY.
- DO NOT ATTEMPT TO REPAIR. REPAIRS SHOULD ONLY BE MADE BY AUTHORIZED, TRAINED PERSONNEL. IF THERE IS ANY INDICATION OF A MALFUNCTION, DISCONNECT POWER AND CONTACT CATALYTIC GENERATORS, LLC. OR LOCAL DISTRIBUTOR.
- DO NOT INVERT BOTTLE WITH ETHY-GEN® II ON TOP OF RESERVOIR. THIS CHANGES THE ETHYLENE PRODUCTION RATE AND THE UNSTABLE POSITION COULD RESULT IN BOTTLE BEING TIPPED OVER, CAUSING A FIRE HAZARD.
- DO NOT USE OTHER ETHYLENE PRODUCING DEVICES WITH THIS GENERATOR.

#### ELECTRICAL SPECIFICATIONS

See generator side panel to confirm voltage

120 VAC / 1.33 AMP / 160 W / 60 Hz

**ETHY-GEN® II IS A FLAMMABLE LIQUID  
KEEP AWAY FROM HEAT AND OPEN FLAME**

#### IMPORTANT: ONLY USE ETHY-GEN® II IN THIS CATALYTIC GENERATOR

ETHY-GEN® II Concentrate is specially formulated to quickly and efficiently produce ethylene (C<sub>2</sub>H<sub>4</sub>) when reacted to the properly heated catalyst contained in our generators. The emissions from ETHY-GEN® II, when converted by our generator, have been thoroughly tested by third party laboratories for government registrations and no harmful byproducts are created. *Any liquid other than ETHY-GEN® II passing over this catalyst bed may drastically shorten the generator's life due to the production of abnormal condensation and undesired substances, which will clog the generator. It may produce a residue in the catalyst bed which will cause the generator to have inefficient conversion to ethylene and perhaps render the unit inoperable. Also the use of liquids other than ETHY-GEN® II may convert into dangerous and unhealthy byproducts.*

## IMPORTANT NOTES ABOUT ETHY-GEN® II CONCENTRATE

- Ethy-Gen® II Concentrate holds the required registration as a Plant Protection Product with the US EPA, UK CRD and other governing bodies that regulate the use of ethylene and ethylene generating liquids for ripening and degreening. Use of unregistered products is unlawful in many countries. ETHY-GEN® II has been tested and will not convert into dangerous and unhealthy byproducts.
- The use of any liquid other than ETHY-GEN® II Concentrate in a generator from Catalytic Generators, LLC is a violation of our lease unless prior written notice is given by us and the appropriate US or UK Government Regulatory Agencies.
- Using inferior or illegal liquids in this generator for fruit ripening will produce residues in the catalyst. These residues will eventually clog the catalyst chamber, decrease ethylene production, create dangerous/unhealthy byproducts and void the generator warranty.

## OPERATION STATUS LIGHT

The circuitry of the generator constantly monitors the internal catalytic conversion process and will indicate if there is a malfunction via the "Operation Status" Light.

This light will flash GREEN when the generator is first powered on; it will also flash GREEN if the internal catalyst bed temperature falls below the permissible operating temperature range.

A RED or Flashing RED light indicates that there is an internal problem and the generator must be reset. Follow the reset procedure as listed on the generator. If the Operation Status Light fails to return to Solid Green, the unit needs to be returned for service.

### OPERATION STATUS

Indicates performance of generator catalyst

- NORMAL
- WILL NOT OPERATE

If RED, perform RESET

## GENERATOR RETURN

If a generator does not appear to be functioning properly, please check the following:

- Is electricity is correctly supplied to the generator?
- Has the generator circuit breaker tripped? Reset if necessary.
- Check the Operation Status Light as described above.

After checking these, if the unit still appears to be malfunctioning, contact us. If you are outside of North America, contact your nearest distributor.

When returning a generator for shipment, remove any Ethy-Gen® II from the reservoir, carefully pack and protect generator in a suitable box, and ship via a traceable and insured method.

***Note on leased generators in North America: if you need a replacement generator, you need to call us to initiate the return & replacement process!***

## WARRANTY

Catalytic Generators, LLC (CGL) warrants that this generator shall be free from defects in material and manufacture, and conform to our specifications as stipulated in product literature. If it fails to conform to such specifications or any defect in material or manufacture appears within one year from the date of shipment, CGL's entire liability, and the Buyer's exclusive remedy, shall be, at the Buyer's option, either to repair or replace the generator within a reasonable time after written notification thereof and return of the defective generator.

EXCEPT AS SPECIFICALLY STATED HEREIN, THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO ANY PARTS OR PRODUCTS MANUFACTURED BY CGL. CGL EXPRESSLY EXCLUDES AND DISCLAIMS ANY IMPLIED WARRANTY OF MERCHANTABILITY AND ANY WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE, APPLICATION OR USE, AND BUYER AGREES THAT THE GOODS ARE SOLD "AS IS."

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[www.catalyticgenerators.com](http://www.catalyticgenerators.com)

**Ripening Guides:** we have recommendations for the ripening of many fruits on our web site at [www.catalyticgenerators.com/ripeningtips.html](http://www.catalyticgenerators.com/ripeningtips.html)

**Ripening Room / Postharvest Supplies:** our sister company, QA Supplies, has hundreds of instruments used to inspect, ripen and monitor fruit.

Visit [www.QASupplies.com](http://www.QASupplies.com).