

ATTACHMENT 7: ODOR ABATEMENT PLAN, DATED APRIL 16, 2021

Cannabis Odor Abatement Plan (Revised #3)

April 16, 2021

Prepared for:

Autumn Brands & Ocean Hill Farms

Site Address: 3615 Foothill Rd
Carpinteria, CA 93013

Prepared by:

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Attachment 2 - Santa Barbara APCD- Cannabis Odor Control Presentation

Attachment 3 - December 8, 2017 was performed by CPF Associates titled Screening Health Assessment of Waterless Vapor Phase Odor Control Technology

April 16, 2021

Autumn Brands & Ocean Hill Farms

Site Address: 3615 Foothill Rd

Carpinteria, CA 93013

APN 005-280-041

1.0 Compliance with Standards

On behalf of Autumn Brands & Ocean Hill Farms (the applicants), Criterion Environmental, Inc. has prepared this Cannabis Odor Abatement Plan in compliance with the Santa Barbara County Coastal Zoning Ordinance, Section 35-144U. Cannabis Regulations. This plan included the evaluation of the following:

1. The proposed project site, 3615 Foothill Road and analysis of existing infrastructure;
2. Odor emitting activities including cultivation and processing activities taking place onsite;
3. Surrounding land uses including proximity of residential areas;
4. Site specific installation of the odor abatement system (Byers System) surrounding the greenhouse area;
5. Installation of charcoal scrubbers (carbon filters) in each processing area;
6. Technology effectiveness in reducing and/or eliminating cannabis-related odors; and
7. Other options for best available odor control technologies and an analysis of systems available;
8. Ecosorb content and health studies.

2.0 Site Description

The project is a request for a Coastal Development Permit, Case No. 20CDP-00000-00079, and a Revised Development Plan, Case No. 20DVP-00000-00011, of the original Development Plan (approved November 17, 1969) to allow approximately 8.92 acres (388,472 square feet) of mixed light and nursery cannabis cultivation. Cultivation activities will occur within seven existing greenhouses. Processing will occur within Processing Building #1 (23,072 square feet) and Processing Building #2 (4,870 square feet). Onsite cultivation (as defined by the Article II Coastal Zoning Ordinance) will total approximately 9.56 acres.

An approximately 23 ft. wide section of Processing Building #1 will be demolished to provide separation from Greenhouse #3. An approximately 2,000 square foot as built, boiler room and approximately 950 square foot irrigation room attached to Greenhouse #6 will be validated. The equipment associated with the Byers Odor Abatement System and an emergency generator will be validated under this permit. These interior structures/rooms will be validated under appropriate building permits. Additionally,

grading associated with the unpermitted installation of a detention basin (approximately 3,300 cubic yards cut and 1,000 cubic yards fill) and bioswale (585 cubic yards cut and 296 cubic yards fill) will be validated. An approximately 22,500 square feet area, including the area of the bioswale, will be restored to the natural riparian habitat. Portions of the existing agricultural access road will be removed so that it is outside of the Environmentally Sensitive Habitat (ESH) buffer area. The project also includes the demolition/removal of two unpermitted water tanks, a shipping container, two storage structures, and an overhang on Processing Structure #2. The perimeter of the parcel is enclosed with an 8 ft. tall chain-link fence. Privacy slats will be added to the chain-link fence for security and screening. Existing landscaping provides screening from the abutting roadway. An existing single-family dwelling will remain onsite. The current residents are co-owners and operators of Autumn Brands and will continue to reside in the dwelling.

In the event that site specific testing indicates that the property would substantially benefit from a re-evaluation of best available control technology for achieving either superior odor control and/or equivalent odor control with greater cost and energy efficiency, the applicant shall make the appropriate upgrades, including but not limited to scrubbers to mitigate odor from cultivation activities in the greenhouses.

A total of 71 parking spaces exist and will remain. Four will be reserved for preferential carpool/van parking. The cannabis operation includes up to 150 full time employees, including six to eight managerial staff on site. Autumn Brands will employ up to 100 employees, and Ocean Hill Farms will employ 50 employees. The hours of operation will be between 6:00 a.m. and 4:00 p.m. Monday through Friday, and 7:00 a.m. to noon on Saturdays. The cannabis operation will be served by an existing agricultural water well and the Carpinteria Valley Water District. A new septic system will provide wastewater treatment for the operation. Access will continue to be taken from the existing driveway off Foothill Road (Highway 192). The property is a 24.03-acre parcel zoned AG-I-20 located within the Coastal Zone and Area A of the Carpinteria Agricultural Overlay. The parcel is shown as APN 005-280-041 and addressed as 3615 Foothill Road, Toro Canyon Plan Area, First Supervisorial District. See the attached Floor Plan which specifies location of odor emitting activities and emissions.

3.0 Description of Odor Emitting Activities and Phases

Potential odor emitting activities that may occur onsite are as follows:

Immature plants (also known as “nursery”): Because these immatures plants are non-flowering, they emit little to no odor. Plants are typically in the immature growing phase for 4-6 weeks.

Vegetative plants (beginning stage in the Greenhouse): The vegetative stage in the greenhouse will take approximately 3-4 weeks where little odor will be produced.

Flowering plants: Once a plant begins to flower, it is considered a mature plant. Unlike immature and vegetative plants, flowering plants generate odor. Plants are typically in the flowering phase for 4-5 weeks before being harvested. At this stage the plant terpenes emit odors.

Processing: Processing includes activities associated with drying, bucking, curing, grading, trimming, storing, packaging, and labeling of cannabis products. Processing activities generate the strongest odor emissions. Plants are typically undergoing processing for 4 weeks total. At harvest, plants are cut down and quickly transferred to the processing area to be dried. The drying process can take one (1) to two (2) weeks. From there, the dried plants are bucked off their stems and trimmed into their final form, which takes one (1) day. They are moved to the curing room within airtight bins, for approximately one (1) to two (2) weeks and then packaged up for bulk wholesale or retail ready packaging. Once the flower enters airtight bins and sealed final packaging containers, the odors are effectively contained.

Transport-only distribution: There are no odors associated with transport only distribution activities. Transport only distribution is simply a State required accessory license to multiple cultivation licenses under one entity. It is used to create manifests to move plants from the Nursery license to the Cultivation license and from the Cultivation License to the Processor License. There are no odors associated with Transport only distribution activities.

Distribution: There are no odors associated with distribution activities. Packaged flower waiting for distribution/transportation off site is stored (Quarantined) under the Distributor License onsite in air tight bins and in sealed final packaging containers. Distribution activities are limited and consist of simply storing packaged product onsite, and holding it in quarantine until the testing lab has verified that the product has passed test, and is safe for release to retail (for consumption by a consumer). Distribution activities also include quality assurance and quality control, including verification that the product packaging is compliant (e.g. labeling). Small cargo vans load up packaged products for transportation offsite within the odor controlled warehouses to ensure all odors are mitigated.

4.0 Byers Odor Equipment and Methods

Byers Scientific and Manufacturing – Primarily to mitigate cultivation odors in greenhouses, and also mitigate processing odors in warehouses. Byers Scientific and Manufacturing is the best available technology to mitigate odors from cannabis nursery and cultivation in greenhouses. The Byers system 6” PVC perforated odor vent pipe is installed not only throughout the perimeter of the greenhouse areas, where cultivation is taking place, but also throughout the perimeter of the warehouses, where processing is taking place. Additionally, the applicant has installed the system down the center of the

greenhouse area, as an additional preventative measure. As wind approaches a greenhouse, from any direction, the first thing it will encounter is the virtual curtain of vapor. Gases emitting from roof-vented greenhouses actually tend to initially gather in the valleys between the ridge lines. This is due to the eddy effect created by the vents themselves. As the wind carries the vapor through the valleys, neutralization occurs as the neutralizer and cannabis gasses mix. Encountering an additional section of vapor is an additional measure of dosing. It should be noted that just as the wind first encounters the vapor curtain as it approaches the greenhouse, a third dosing occurs as it exits further adding to neutralization.

The Byers System is an approved system as defined by the County of Santa Barbara's Coastal Zoning Ordinance, Section 35-144U Cannabis Regulations – which includes a “vapor phase system.” Furthermore, the Byer's System is an approved vapor phase system because it meets the following standards:

- **“The resulting odors must be odor-neutralizing, not odor masking”** - The neutralizing agent is an actual deodorant neutralizers (not masking agents) specifically formulated for cannabis odors.
- **“The technology must not be utilized in excessive amounts to produce a differing scent (such as pine or citrus)”** - The neutralizing agent does not generate differing scents and is used in a proportional amount to the cannabis odor emissions. The system can be modified or adjusted to deliver the deodorant with the objective to obtain a neutral odor.
- **“Use of these systems must have supporting documentation which meet United States Environmental Protection Agency's Acute Exposure Guideline Levels or similar public health threshold”** - The deodorant and/or neutralizing by-products is not a public health (acute or chronic) or environmental concern with supporting documentation that meets United States Environmental Protection Agency's Acute Exposure Guideline Levels or similar public health thresholds. An independent study (Dated December 8, 2017) was performed by CPF Associates titled Screening Health Assessment of Waterless Vapor Phase Odor Control Technology. This health study of the neutralizer was performed to evaluate the potential air impacts and public health risks thru inhalation exposure. The conclusions from the study indicated that use of neutralizer within the operation of the Byers System would not be expected to pose a public health concern. The study also concludes the potential air concentrations calculated using a screening level model in the immediate vicinity of the distribution pipe were below available health-protective inhalation criteria.

The Byer's System is the leading odor neutralizing, vapor-phase technology currently available to prevent these cannabis nuisance odors from drifting off-site. The abatement

system is manufactured by Byers Scientific and Manufacturing and consists of the following (See Attachment 1 for technical information):

How it works:

- a. Within the housing system unit (See Figure 1), a high-flow, low pressure blower is connected to a holding tank containing an odor neutralizing agent developed specifically to neutralize odors from cannabis. The fan unit vaporizes the odor neutralizing agent and distributes it to a piping system.



Figure 1

- b. The PVC piping system is mounted around the upper perimeter of the greenhouses and processing buildings at the roof line as seen in Figure 2. The neutralizing agent injected into the air stream several feet above the piping system (as seen in Figure 3). The cannabis terpene molecules are then neutralized as they mix with the neutralizing agent. The neutralizing agent then surrounds the perimeter of the greenhouses onsite, capturing all odors that may escape during venting of the greenhouses. The neutralizing vapor is designed to always be surrounding the malodor, even if wind direction shifts. The greenhouse structures contain a passive exhaust venting system which allows air to naturally exhaust out the vents located near the roof apex. The venting system is automated and controlled by a computer to mechanically open the vents as needed.



Figure 2

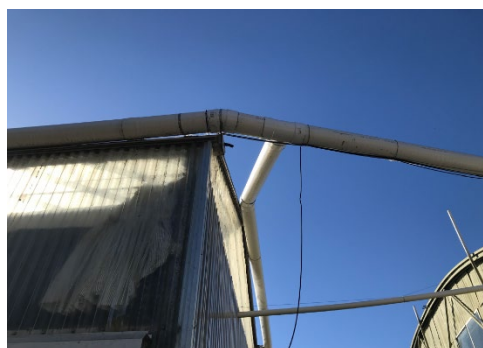


Figure 3

- c. A computer monitoring system which is capable of notifying the operator if an equipment failure has occurred so that the system can be repaired and returned to service as soon as possible.

4.1 Neutralizing Deodorant; Ecosorb CNB107

The odor neutralizing agent to be used within the Byers system is Ecosorb CNB 107 (CNB 107) and is manufactured by OMI Industries, a leader in odor neutralization materials. CNB is comprised of two polysorbate surfactants and a blend of citrus and pine oils with

the remainder water (see Attachment 1 for SDS Sheet). As described on the Safety Data Sheet within Section 11; Toxicity it is listed that there are no other effects known under “Potential Adverse Human health effects and symptoms”. In addition, upon review of the confidential and redacted formulation, the Santa Barbara Air Pollution Control District staff have confirmed that none of the ingredients in Ecosorb CNB 107 are considered toxic air contaminants (TACs) as identified by the State of California.

4.2 Site Specific Design Parameters of the Odor System

The proposed Byers system will include approximately 3,633 lineal feet of the perforated piping system attached at the upper part of greenhouses and/or structures where odor-emitting activities are anticipated to maximize mitigation of odor. A single fan unit will be used to vaporize the odor neutralizing product Ecosorb CNB107.



Figure 4

5.0 Charcoal/Carbon Filters – Processing activities in Warehouses

Charcoal scrubbers/carbon filters are considered a best available odor control technology for enclosed spaces. Activated charcoal filtration systems are consistent with accepted industry specific systems to mitigate odors from cannabis processes. Within the Final Environmental Impact Report, Activated carbon filter systems are listed as an approved odor abatement technology. However, charcoal filters are typically not feasible for open structures or greenhouses and would not effectively mitigate odors in these structures due to the large volume of air that would need to be processed. Activated carbon has also been a proven technology to reduce odors from other industries (including water damage, mold, bacteria, crime scenes, etc).

How it works:

Charcoal filters are used in conjunction with usually an inline fan to pull the air through the filter which includes activated carbon or charcoal. This media has a large surface area and when exposed to a cannabis terpene odor is adsorbed onto the media. This

technology can be very effective in removing cannabis odors, especially when the media is new. The charcoal filters will be placed with the intent to create a negative pressure as compared to the surrounding air. This negative pressure will contain the mal odors from escaping outside of the building. It should be noted that the following rooms will include charcoal filters which are also inside of the Byers vapor phase odor control system to serve as a backup.

$$\text{Cubic Feet/Min (needed)} = \frac{\text{Room Volume} \times \text{Air Changes/hour}}{60}$$

Air Changes/hour = 4

Autumn Brands

Dry Room

Volume = 60,000 ft³

CFMneeded = (60,000 x 4) ÷ 60 = 4,000 cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = 4,000 ÷ 710 = 6 machines

Packing Room

Volume = 17,290 ft³

CFMneeded = (17,290 x 4) ÷ 60 = 1,152 cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = 1,152 ÷ 710 = 2 machines

Trim Room

Volume = 15,314 ft³

CFMneeded = (15,314 x 4) ÷ 60 = 1,020 cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = 1,020 ÷ 710 = 2 machines

Harvest Room

Volume = 17,290 ft³

CFMneeded = (17,290 x 4) ÷ 60 = 1,152 cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = 1,152 ÷ 710 = 2 machines

Cure Room

Volume = 20,000 ft³

CFMneeded = (20,000 x 4) ÷ 60 = 1,333 cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = 1,333 ÷ 710 = 2 machines

Ocean Hill Farms

Packing Room

Volume = 4,200 ft³

CFMneeded = $(4,200 \times 4) \div 60 = 280$ cfm

Hydro Crunch Carbon Filter = 400 CFM

Number of machines = $280 \div 400 = 1$ machines

Harvest Room

Volume = 4,200 ft³

CFMneeded = $(4,200 \times 4) \div 60 = 280$ cfm

Hydro Crunch Carbon Filter = 400 CFM

Number of machines = $280 \div 400 = 1$ machines

Processing Room

Volume = 4,200 ft³

CFMneeded = $(4,200 \times 4) \div 60 = 280$ cfm

Hydro Crunch Carbon Filter = 400 CFM

Number of machines = $280 \div 400 = 1$ machines

Processing Room #2

Volume = 22,500 ft³

CFMneeded = $(22,500 \times 4) \div 60 = 1,500$ cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = $1,500 \div 710 = 3$ machines (2; 710cmf + 1; 400cmf)

Storage Room

Volume = 45,000 ft³

CFMneeded = $(45,000 \times 4) \div 60 = 3,000$ cfm

Hydro Crunch Carbon Filter = 710 CFM

Number of machines = $3,000 \div 710 = 5$ machines

Charcoal Filter Specifications by Hydro Crunch (<https://www.hydrocrunch.com/>) or similar.

710 CFM Hydro Crunch Charcoal Virgin Carbon Filter:

- Pre filter included
- High quality 100% virgin activated carbon
- 99.5% effective at removing odors, organic compound and airborne particulates
- Large mesh openings for a highly effective scrub
- Designed for enclosed environment

- 8" flange x 24" height

The following Figure is a diagram of the location of the charcoal filters

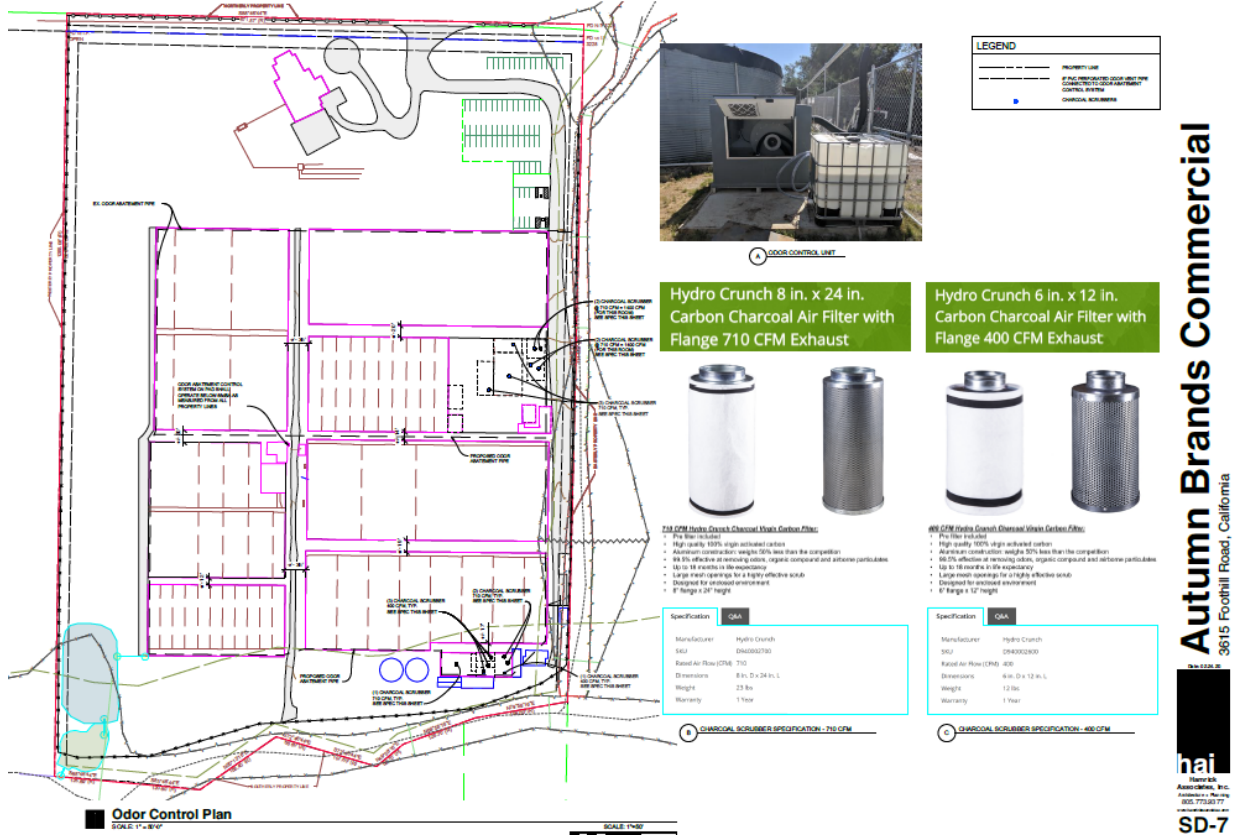


Figure 5

400 CFM Hydro Crunch Charcoal Virgin Carbon Filter:

- Pre filter included
- High quality 100% virgin activated carbon
- 99.5% effective at removing odors, organic compound and airborne particulates
- Large mesh openings for a highly effective scrub
- Designed for enclosed environment
- 6" flange x 12" height

Establishing a filter or media replacement schedule will also be important as to the effectiveness of the odor mitigation system. In our professional opinion, deploying various approved odor abatement technologies (i.e Vapor-phase in combination with charcoal filters) is an appropriate odor abatement strategy and yields the best results.

It is anticipated that environmental conditions (temperature, humidity, wind direction & speed) will likely change during the day and/or seasonally which may increase or

decrease the odor intensity of the cannabis activities. These environmental fluctuations are understood and the applicant is committed to monitoring the odor abatement system through olfactory observations and making necessary adjustments to the system in order to eliminate cannabis related odors beyond the property boundaries.

6.0 Review and Approval by Third Parties

Vapor-phase odor neutralizing technology is a proven odor abatement technology for reducing nuisance odors including cannabis related odors. According to a May 2018 presentation by SB Air Pollution Control District (APCD) (See Attachment 2), an inspection was performed by APCD personnel of a 650,000 ft² cannabis cultivation facility in Carpinteria which revealed that an odor control system was operating and working as advertised and noted that pungent odors from inside the greenhouse, “could not be detected directly outside the greenhouse or at the property line.”

Additionally, the Long Range Planning Division of Santa Barbara County recently prepared a Final Environmental Impact Report (FEIR) to amend its Land Use and Development Code to allow certain types of cannabis activities. Within the FEIR, Appendix F indicates that vapor-phase technology, including the Byers Scientific system, is effectively in odor control in the cannabis industry including Carpinteria, CA and Pueblo, CO.



Figure 6

Residential Zones

3615 Foothill Road is located on an Ag-I zoned property that is 24 acres. It is surrounded by other agricultural properties to the south, east, and west. Foothill road is north of the subject property, as well as a residential area.

Appropriate maintenance of the Byers technology in conjunction with charcoal scrubbers will effectively mitigate odors generated from cannabis activities onsite from traveling to the residential areas.

There is a residence on the subject property, which is less than 200 feet away. The residents have reported minimal to no odor emissions from the cannabis activities taking place less than 150 feet away from the residential structure. See Figure 6.

Field Observations

Criterion Environmental personnel, including myself, have also performed olfactory assessments at various cannabis cultivation properties in Carpinteria including the subject site at 3615 Foothill Rd that are deploying the Byers Odor abatement technology. Results from these assessments are similar to the findings from APCD in that there is a substantial reduction in the cannabis related odor intensity within a few feet of the odor emitting source. The onsite field assessments also indicated an obvious reduction or dissipation in odor observation the further downwind from the mixing zone. The mixing zone is the air space above the piping delivery system where the deodorant neutralizer and the cannabis odors interact.

Standard Operating Procedures

- 1) Designate an onsite Odor Management Specialist(s) that has been provided with resources/training to control odor.
- 2) The onsite Odor Management Specialist(s) will at a minimum walk the Project Site two (2) times per day to:
 - a. Inspect that all means of active odor control (neutralizing vapor or carbon filtration) are operational and in good working order.
 - b. Ensure filters are adequate for the volume of cannabis and designed specifically for the size of each room.
 - c. Observe onsite personnel to see if odor control BMPs are being implemented by facility staff (facility doors kept closed whenever feasible, processing kept indoors, etc.). If BMPs are not being implemented consistently by site personnel, report to an appropriate supervisor/manager for future corrective action.
 - d. Be the first point of contact to receive odor complaints from the regulatory agency or community members; request as much detail as possible regarding the nature of the complaint and keep detailed records, including:
 - i. Location (be exact, narrow it down within 100-feet or less if possible)
 - ii. Time (be exact, to the minute if possible)
 - iii. Weather conditions (approximate temperature, wind speed, etc.)
 - iv. Visual observations (did the complainant see the cannabis facility/operations from which the odor may have come, any unusual activities in their area)
- 3) Build a culture such that all company personnel understand the importance of achieving proper odor control and what actions each person is responsible to do their part in achieving proper odor control at their facility.
- 4) Properly design, operate, and maintain active odor control systems.
- 5) Lesser miscellaneous odor management BMPs will be implemented consistently throughout facility operations, including but not limited to:
 - a. External facility doors and meat flaps located between processing rooms will be kept closed whenever feasible. The opening of doors will only occur

during short periods of personnel/vehicle entry and exit, especially in areas of cannabis processing.

- b. All processing activities will remain within the perimeter of facility's odor control system.
- c. All harvested plants are placed into closed bins and transported to processing buildings within the neutralizing vapor perimeter.
- d. All finished products will be sealed prior to departure. While loading and unloading, warehouse rolling doors will be opened to allow for distribution vehicles to enter. The rolling doors will be immediately closed after the distribution vehicle prior to loading and only opened for departure.

7.0 Odor Complaint Tracking System

In accordance with County of Santa Barbara's Coastal Zoning Ordinance, Section 35-144U Cannabis Regulations, this applicant will designate the CEO of Autumn Brands with the other three owners as back-up that will be responsible for responding to odor complaint calls by telephone on a 24-hour basis. The contact phone number is (805)330-9739.

The applicant will provide property owners and residents of property located within 1,000 feet of the lot on which the cannabis activity is conducted, the contact information of the local contact responsible for odor complaints. The operator is required to immediately notify the county of any changes to the contact.

The applicant will notify the county of any complaints that the operator receives, within 24 hours of receiving the complaint.

The applicant understands that failure to respond to calls in a timely and appropriate manner may result in revocation of the permit, which means that an initial call shall be responded to within one hour of the time the initial call was made, and a corrective action shall commence within 2 hours of the initial call, if corrective action is required, to address any violation of this section.

The Director of Operations shall be responsible for management of an excel database, which is the vehicle to track all complaints. The database will be secured, and backed up, and records will be maintained for a minimum of 5 years. The database will include all of the following information:

- Contact information of the complaint;
- Description of the location from which the complainant detected the odors
- Time that the operator received the complaint
- Description of the complaint

- Description of the activities occurring on site when the complainant detected the odors
- Actions implemented to address the odor

These records shall be provided as part of any inspections of the operation upon the Departments request.

The applicant will allow the Department access to the facility at all times, without notice, for the purpose of inspecting odor mitigation practices, odor sources, and complaint tracking records.

The applicant understands that if the Department receives three verified complaints regarding odor events in any 365 day period, the permittee shall implement corrective actions to comply with the odor abatement requirements. This may include submitting a written statement that sets forth the corrective actions and timing of implementation of each corrective action. The department may require the corrective actions to be recertified by a professional engineer or Certified industrial hygienist. The department may take additional enforcement actions pursuant to chapter 35-108 which may include initiating proceedings to revoke the applicable cannabis land use entitlements.

8.0 Analysis of Other Technologies

Ozone generators are often used for odor control, particularly within the structural restoration industry such as smoke and odor or mold/sewage odor control. However, ozone technology has significant disadvantages and concerns. Ozone is a reactive gas and can be harmful if exposed to humans. OSHA has established permissible exposure limits to workers and EPA, NIOSH and FDA have all agreed there is an increase health risk if exposed to ozone. Based on this information, we do not recommend the use of ozone as an odor mitigation technology.

Masking Agents – There are several odor masking agents on the market that essentially disguise a malodor with a stronger more pleasant odor. Due to the ineffectiveness of actually neutralizing the odor, we do not recommend the use of masking agents.

Other than the currently approved odor abatement technologies previously discussed within this plan (i.e. vapor phase technology & activated carbon filters) along with the Other odor mitigation technologies, Criterion Environmental, Inc. is unaware of any other odor technologies on the market specifically designed for cannabis odor mitigation.

In the event that site specific testing indicates that the property would substantially benefit from a re-evaluation of best available control technology for achieving either superior odor control and/or equivalent odor control with greater cost and energy efficiency, the applicant shall make the appropriate upgrades, including but not limited to scrubbers to mitigate odor from cultivation activities in the greenhouses.

9.0 Conclusions

The Byers vapor-phase system, in conjunction with the use of activated carbon/charcoal filters as supplemental odor removal, are approved odor control technologies with recognition from SB APCD. Based on the review of the proposed technologies, our field observations, the efficiency of odor removal from these odor abatement systems and the site specific installation at this property, we conclude the following:

1. The neutralizing agent is an actual deodorant neutralizer (not masking agents) specifically formulated for cannabis odors
2. The system can be modified or adjusted to deliver the deodorant with the objective to obtain a neutral odor and
3. The deodorant and/or neutralizing by-products is not a public health (acute or chronic) or environmental concern with supporting documentation that meets United States Environmental Protection Agency's Acute Exposure Guideline Levels or similar public health thresholds.

As a Licensed Professional Engineer and Certified Industrial Hygienist, I have reviewed and certified that the equipment and methods, as designed, to be used for reducing odors are consistent with accepted and available industry-specific best control technologies and methods designed to mitigate cannabis related odors. The Odor Abatement Plan as designed will prevent odors, generated from cannabis activities taking place at this site, from being experienced within residential zones.

10.0 Limitations

It should be noted and understood that although cannabis activities have been legalized and permitted within the County, it is expected that illegal and unpermitted commercial and personal growing operations will continue within the immediate area. Some of these operations are not complying with State or County regulations, particularly as it relates to odor abatement and are not in full compliance with the County's standards for odor abatement. Therefore malodor complaints by the public may be incorrectly directed at the applicant. Cannabis odors, whether "real" or "psychological" are subjective and interpretive, depending on the receptor. If you have any questions or concerns regarding the information provided, please do not hesitate to call us at 805.432.4888.

Respectfully submitted,



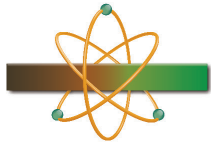
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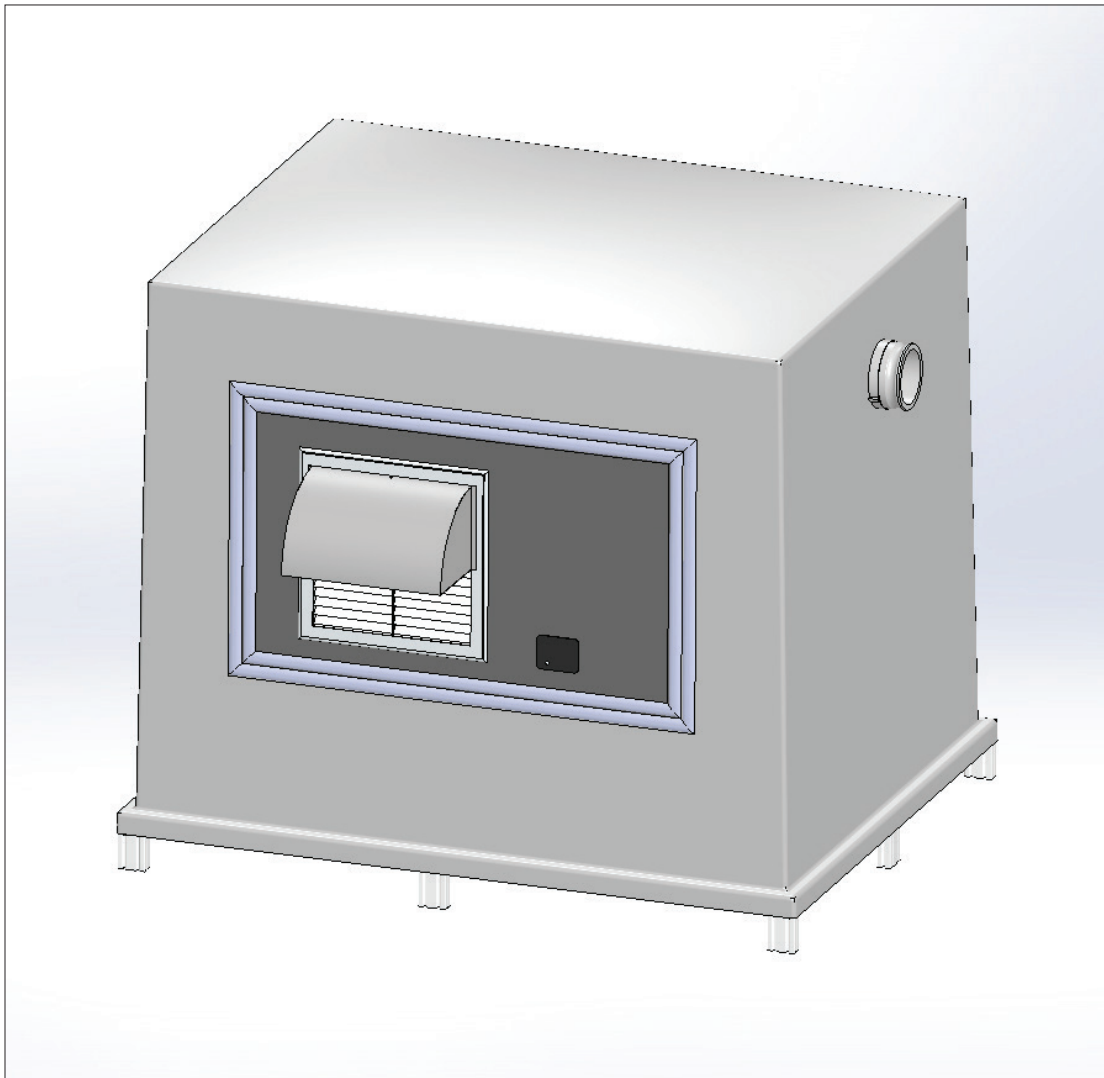
Attachment 1

Byers Vapor Phase Odor Control System- Technical Brochure & CNB107 SDS



Byers Scientific & Manufacturing
Industrial Odor Management






INSTRUCTION MANUAL



Waterless Vapor System for Odor Control HPII Series



Read equipment manufacturer's manual before operating or servicing system. Failure to understand how to safely operate the system can result in an accident causing serious injury or death. Only qualified personnel should operate or service the system.

 DANGER			
			
<p>Hazardous Voltage can cause electrical shock or death.</p>	<p>High speed rotating equipment can cause severe personal injury.</p>	<p>Lock out/Tag out to prevent personal injury <u>BEFORE</u> starting <u>ANY</u> service or inspection.</p>	<p>Avoid injury. You <u>MUST</u> read and understand all instructions in this manual <u>BEFORE</u> operation.</p>

TECHNICAL SPECIFICATIONS

SYSTEM OVERVIEW

Footprint 74.5" L x 59.0" D x 63" H

Decibels at 30 feet: 65 dB

Access Door with Intake Filter

Filter Size: 18" x 18" x 1" Nominal
(Actual: 17.75" x 17.75" x 0.75")

63 Gallon Storage Tank

Internal circulation via eductors

Level Sensor

Temperature Sensor

In-Tank Heater for cold climates

Tank can be filled by toggle switch operated pump affixed to tote/drum

Evaporation Tank

Patent-Pending Uniform Vapor Production

Level Sensor

Temperature Sensor

In-Tank Heater

Can produce up to 7 equivalent gallons of vapor/day

Tank fills automatically via PLC

TECHNICAL SPECIFICATIONS CONT'D

ELECTRIC

UL-LISTED PANEL

40 / 50 Amp Service Disconnect Switch

Touch Screen Panel Display

Indicator Lights

Programmable Logic Controller (PLC) for Critical System Operations

Industrial Remote Access Router with External Antenna/Ethernet Connection

High Limit Heat Safety Controllers

3-PHASE COMPONENTS (208- 240 / 480VAC)

Main Blower

7.5 HP Motor

19.4 - 17.6 / 8.8 Full Load Amps

3530 RPM

Secondary Blower

0.5 HP Motor

3450 RPM

In-Tank Heater(s)

2000 - 2660 / 3500 Watts

5.6 - 6.4 / 4.3 Amps

24VDC COMPONENTS

Diaphragm Pumps (3)

3.0 gallons per hour

3.5 Amps

Precalibrated Level Sensors (2)

Precalibrated Flow Meter with Totalizer

Precalibrated Differential Pressure Sensor (2)

Temperature Sensors (2)

OPERATION

SAFETY WARNING

ONLY QUALIFIED PERSONNEL THAT HAVE BEEN PROPERLY TRAINED SHOULD OPERATE THE SYSTEM

BEFORE TURNING ON

- The yellow/red handled service disconnect located on the electric panel door must be turned to the ON position. The green indicator light for CONTROL POWER ON will be illuminated to visually show that there is power to the unit
- The HMI (Human-Machine Interface) will boot up upon turning the yellow/red handled service disconnect. To learn more about using the HMI, please refer to the guide within this manual. If it does not, contact Byers Scientific & Manufacturing for further troubleshooting
- Inspect fan inlets for obstructions
- Check that the auxiliary is filled sufficiently and that the vapor tank level is between 47 - 50%
- Once door is closed, open filter access door to make sure a filter is in place

OPERATING THE SYSTEM

- With the door closed and locked, turn the "CONTROL POWER ON/OFF" switch on the electrical panel to the ON position
- A green light under EVAPORATION FAN RUNNING will indicate that the system is in operation. The MAIN FAN RUNNING indicator light is purposefully delayed and will turn green after three seconds. If a red FAN FAULT appears for either the evaporation or main fan, contact Byers Scientific & Manufacturing for further troubleshooting.
- The system is programmed to be self-operating and we advise that any levels set on the touchscreen should be left as is. Altering the inputs could have a negative impact upon the efficacy of the neutralizing vapor.

OPERATION CONT'D

OPERATING THE SYSTEM CONT'D

- The system will send out an SMS text message or email to personnel to alert of any systems needs e.g., filling auxiliary tank or system fault. Level 1 alarms cause the system to completely shut down to prevent potential harm to the system. Level 1 alarms are primarily due to the VFD (variable frequency drive) on the fans and can be due to a multiple factors, such as low/high supply voltage or motor overheating. After such an event, the fault code displayed on the VFD must be provided to Byers Scientific in order to determine the cause of the fault. Failing to do so and resetting the VFD without understanding the fault can harm the system as the VFD fault codes provide insight to the problem.
- To fill the auxiliary tank, make sure that the "CONTROL POWER ON/OFF" switch on the electrical panel is in the OFF position before opening the door. The toggle switch located inside the system controls the pump plumbed into the drum/tote located next to the system. Flip the toggle switch to the ON position until the level on the auxiliary level sensor reaches a maximum of 99%. Overfilling the tank can lead to a fault and the system will not run.
- When replacing drums/totes, be sure to keep the provided attachment and check the filter at the end of the plumbing before inserting into new drum/tote.
- *For optimum performance and results, Byers Scientific & Manufacturing recommends operating the unit full-time at a minimum output level of 3-4 equivalent gallons per day. The specified minimum level of output has been established based on calculations of deodorizer molar mass contrasted with a baseline typical malodor molar mass. When site-specific conditions necessitate a greater degree of output, the unit output may be increased up to 6-7 equivalent gallons of output. Please consult with Byers Scientific & Manufacturing personnel for assistance in programming your unit for scheduled production.*

MAINTENANCE

Our systems are built for minimal maintenance but will require occasional servicing. Please refer to the separate Maintenance Guide for detailed instructions on servicing the odor control unit.

TROUBLESHOOTING

FAN FAULTED	Contact Byers Scientific & Manufacturing with VFD Fault Code for further information
TRANSFER PUMP FAULTED	Pump motor issue, contact for replacement
EVAPORATION/AUXILIARY TANK FAULTED	Possible hi-limit controller issue, contact Byers Scientific & Manufacturing for further information

CONTACT INFORMATION

Byers Scientific & Manufacturing
2332 W. Industrial Park Drive
Bloomington, IN 47404
Phone: (812) 269-6218

E-mail: info@byers-scientific.com

WARRANTY

KGM Enterprises, Inc. d/b/a Byers Scientific & Manufacturing (Seller) warrants products of its own manufacture, against defects of material and workmanship under normal use and service for a period of THIRTY-SIX (36) months from the date of original installation for Purchaser. This warranty does not apply to any of Seller's products or any part thereof which has been subject to extraordinary wear and tear, accident, abuse, misuse, overloading, acts of God, negligence or alteration or repair by anyone not authorized by Seller. This warranty shall be void if the products are used in any matter other than as explicitly outlined in the product instruction manual. Purchaser's acceptance of the products from Seller indicates that Purchaser is assuming all liability for the consequences of its use or misuse by Purchaser, its employees or others. Further, the materials within Seller's odor control systems are specifically designed for use of Ecosorb® deodorizers. The use of any deodorizers other than Ecosorb® voids all warranties due to potential material incompatibilities that can cause harm to the system.

On products or product components furnished by Seller, but manufactured by others, such as fan motors, Seller extends the same warranty as Seller received from the manufacturer of the products or product components but makes no additional warranty.

THIS WARRANTY CONSTITUTES THE ENTIRE WARRANTY BETWEEN SELLER AND PURCHASER AND IS MADE IN LIEU OF ALL OTHER OBLIGATIONS AND LIABILITIES. SELLER EXPRESSLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, RELATING TO THE PRODUCTS INCLUDING BUT NOT LIMITED TO THE WARRANTY OF MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY EXCLUDED. IN NO EVENT SHALL SELLER BE LIABLE TO PURCHASER FOR ANY LOST PROFITS, INDIRECT, COLLATERAL, INCIDENTAL, SPECIAL, CONSEQUENTIAL OR EXEMPLARY DAMAGES IN CONNECTION WITH PURCHASER'S USE OR OPERATION OF THE PRODUCTS, OR FOR ANY OTHER CAUSE WHATSOEVER RELATING TO THE PRODUCTS OR THEIR SALE OR INSTALLATION.

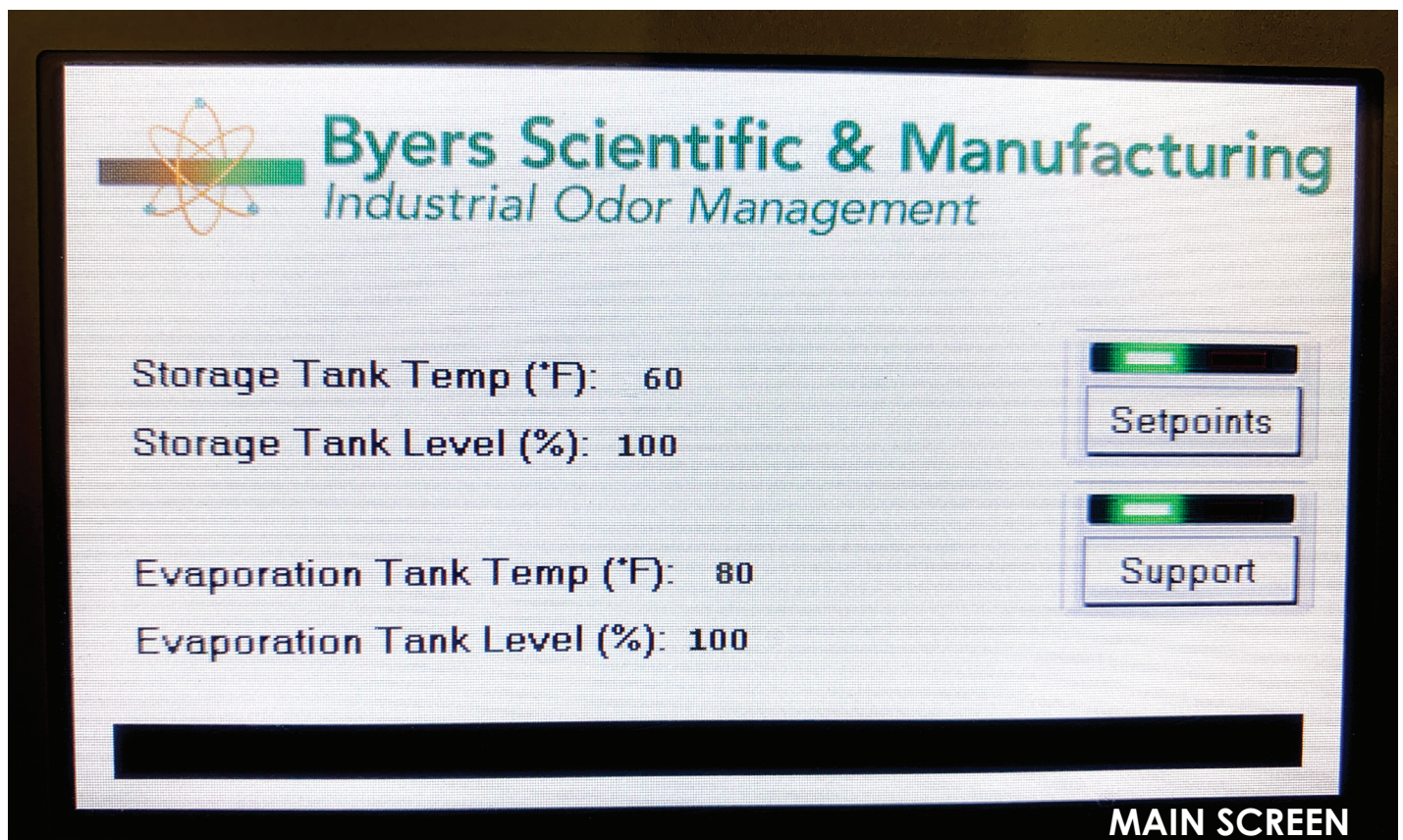
Should Purchaser believe it has a warranty claim, it must contact Seller via phone at 812-369-6218 or via email at info@byers-scientific.com to make arrangements for a review of the warranty claim. Expenses incurred by Purchasers in repairing or replacing any allegedly defective product or parts will not be allowed except where authorized in writing and signed by an officer of Seller.

HMI GUIDE

The touchscreen HMI (Human-Machine Interface) is located on the electrical control panel. The HMI will boot up automatically once the red handled electric disconnect on the panel is turned to the ON position. It takes about 30 seconds for it load the MAIN SCREEN. If the boot up process appears to be stuck/frozen, turn the yellow/red electric disconnect handle to the OFF position to reset and wait at least a minute before turning back ON. If the HMI does not boot up after resetting or any other initial boot up issues, please contact Byers Scientific for further troubleshooting.

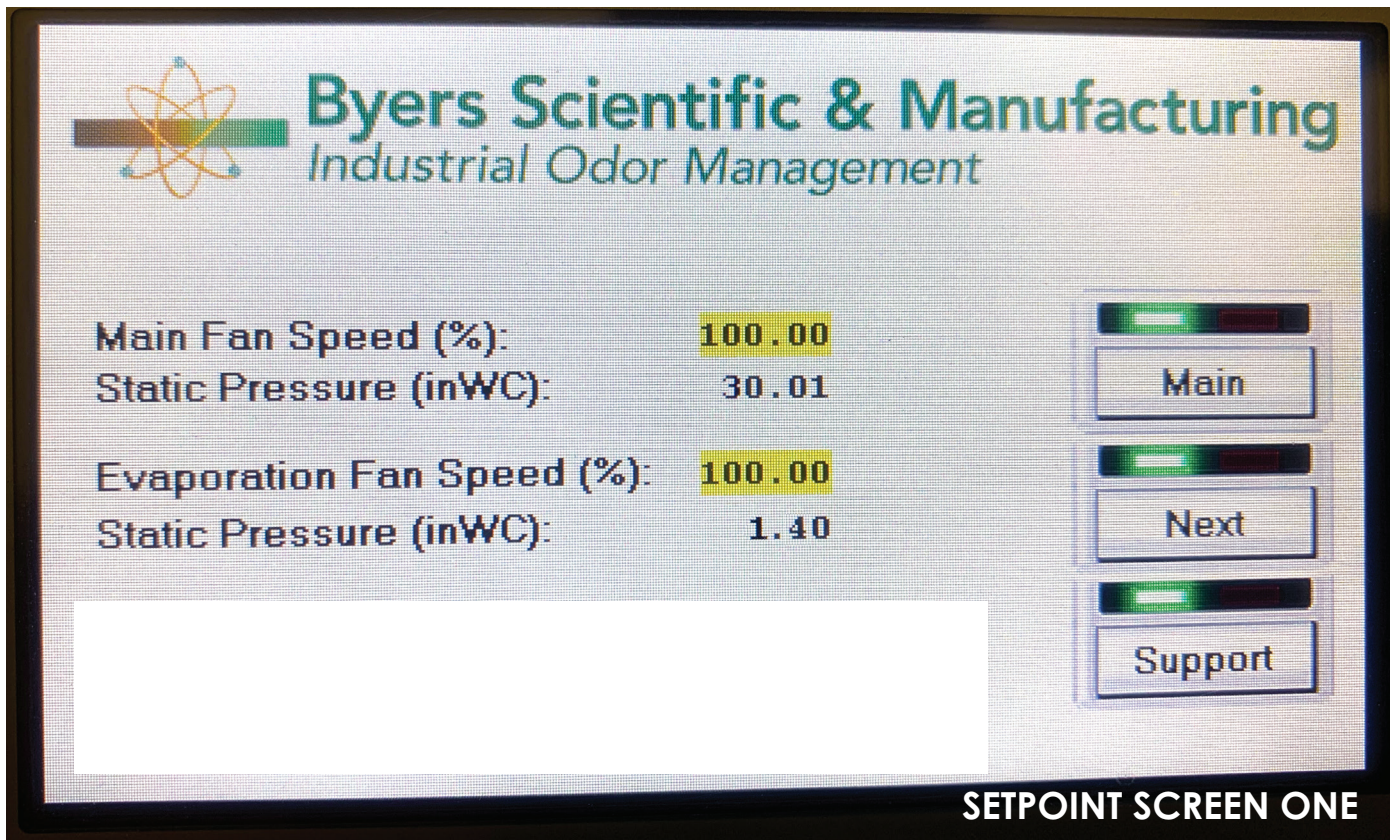
MAIN SCREEN

The MAIN SCREEN is READ ONLY. The values displayed for the storage tank temperature, storage tank level, evaporation tank temperature and evaporation tank level cannot be changed on this screen. See SETPOINTS for instructions on how to manually change the input values.



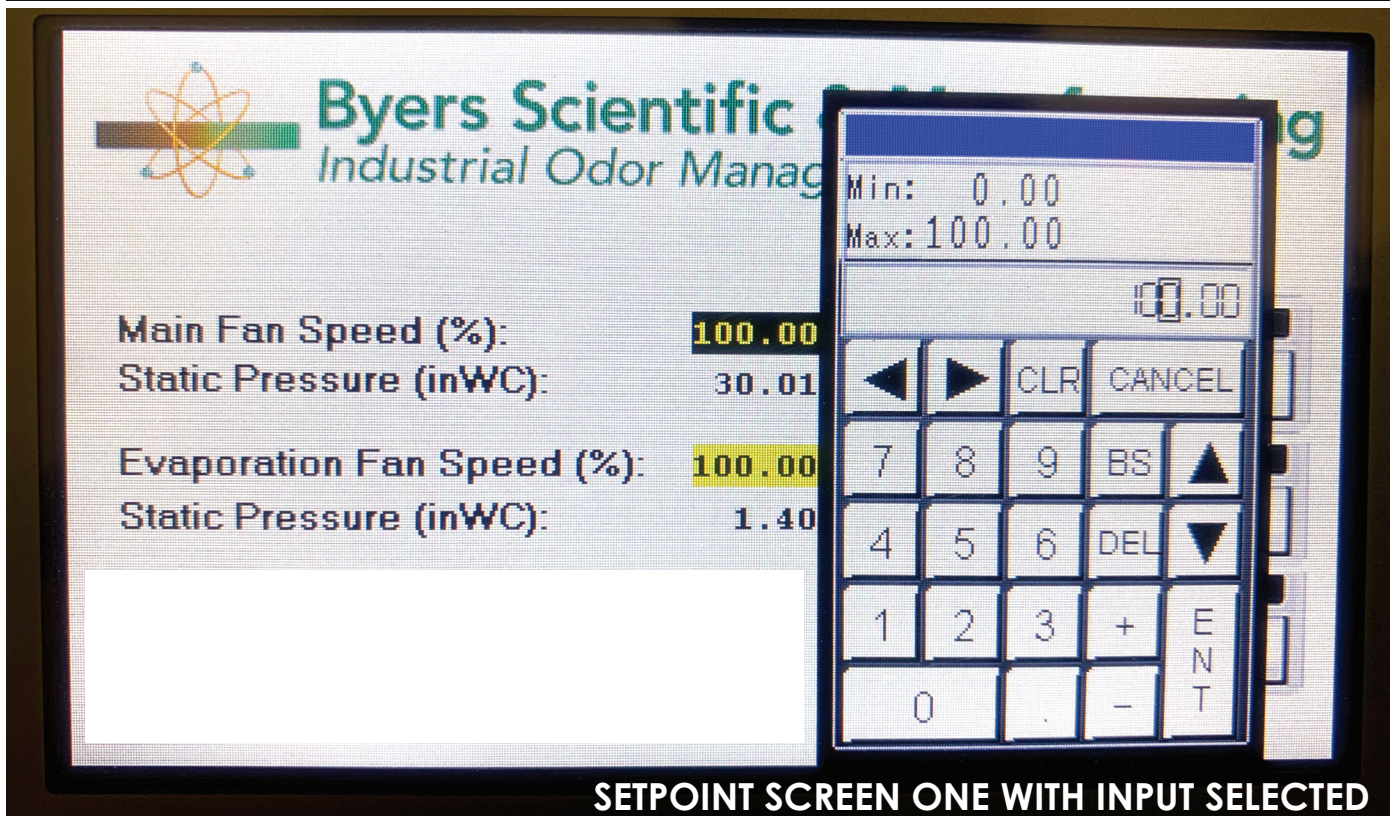
SETPOINTS

The SETPOINTS screens are a combination of read only and input values. The values that are highlighted with YELLOW can be changed by touching within the YELLOW area.



The screenshot shows the 'Byers Scientific & Manufacturing Industrial Odor Management' interface. It displays four data points: Main Fan Speed (%) at 100.00, Static Pressure (inWC) at 30.01, Evaporation Fan Speed (%) at 100.00, and Static Pressure (inWC) at 1.40. The values 100.00 are highlighted in yellow. On the right, there are three buttons: 'Main', 'Next', and 'Support', each with a green indicator bar above it.

SETPOINT SCREEN ONE



This screenshot shows the same interface as the previous one, but with a numeric keypad overlay. The keypad has a display showing '100.00' and a range of 'Min: 0.00' to 'Max: 100.00'. The keypad includes buttons for navigation (left and right arrows), CLR, CANCEL, a numeric keypad (0-9), BS, DEL, +, -, and ENT. The value 100.00 is highlighted in yellow on the screen.

SETPOINT SCREEN ONE WITH INPUT SELECTED

SETPOINTS CONT'D

Once the pop-up screen opens with the number pad, values can be changed to the desirable setpoint. Press ENTER to input the new value and close the pop-up screen.

NOTE: Values CANNOT be changed if scheduling has been enabled via Byers Scientific SCADA. Contact Byers Scientific to disable or change output schedule.

To go to the different SETPOINT screens, press the NEXT button.

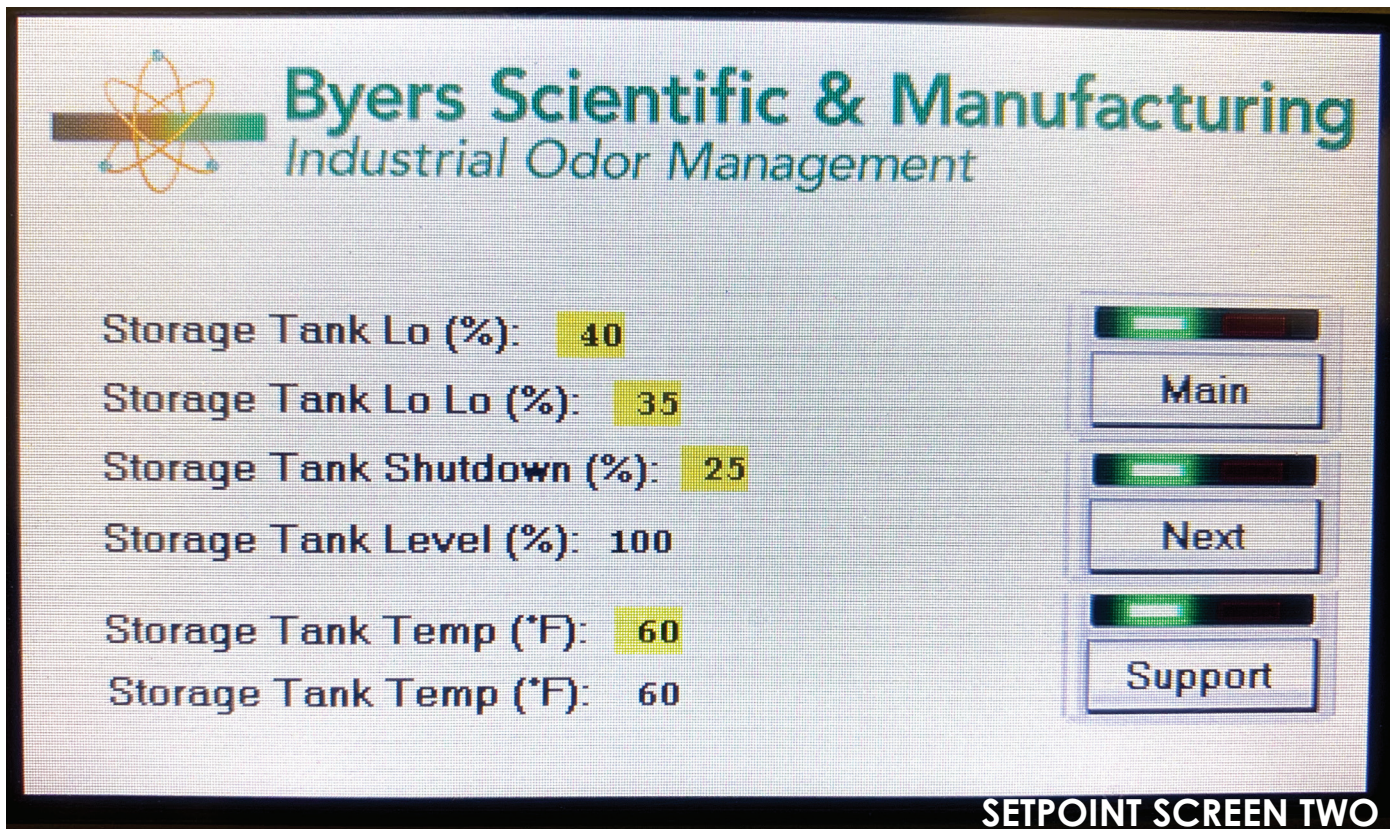
SETPOINT SCREEN ONE OF THREE

Main Fan Speed: 100% is based upon 60 Hz; manufacturer recommends not changing this value. This value can be set by Byers Scientific for scheduling via the SCADA.

Main Fan Static Pressure: Read-only value based upon Main Fan Speed

Evaporation Fan Speed: 100% is based upon 60 Hz; this value can be lowered if output of deodorizer needs to be decreased. This value can be set by Byers Scientific for scheduling via the SCADA.

Evaporation Fan Static Pressure: Read-only value based upon Evaporation Fan Speed



Byers Scientific & Manufacturing
Industrial Odor Management

Storage Tank Lo (%): 40
Storage Tank Lo Lo (%): 35
Storage Tank Shutdown (%): 25
Storage Tank Level (%): 100
Storage Tank Temp (*F): 60
Storage Tank Temp (*F): 60

Main
Next
Support

SETPOINT SCREEN TWO

SETPOINTS CONT'D

SETPOINT SCREEN TWO OF THREE

Storage Tank Setpoints are based upon the level of deodorizer required to remain in the tank for the circulation and transfer pump to function properly. For cold climate locations it is also used to keep the deodorizer from freezing and provide an adequate level of deodorizer over the heating element. Byers Scientific recommends that the setpoints for Storage Tank be kept at the initial set value.

For systems with a Storage Tank Heater, the Lo, Lo Lo, and Lo Lo Lo setpoint values can be safely altered to NO HEATER setpoints once past last date for frost in the spring. If this is done, the setpoint values must be reset back to original HEATER values once the first frost date approaches in the fall.

Storage Tank Lo:	NO HEATER: Minimum setpoint value 20% HEATER: Minimum setpoint value 40% A text/email alert will go out when this setpoint is reached to refill the tank within three (3) days
Storage Tank Lo Lo:	NO HEATER: Minimum setpoint value 15% HEATER: Minimum setpoint value 35% A text/email alert will go out when this setpoint is reached to refill the tank immediately or the system will shut down
Storage Tank Lo Lo Lo:	NO HEATER: Minimum setpoint value 5% HEATER: Minimum setpoint value 25% A text/email alert will go out when this setpoint is reached that the system is shut down to prevent harm to components
Storage Tank Level:	Read-only value of current storage tank level
Storage Tank Temperature:	NO HEATER: N/A HEATER: Minimum setpoint value 35°F. Recommended to be set at 60°F during freezing/near freezing temperatures and 35°F during above freezing temperatures.
Storage Tank Temperature:	Read-only value of current storage tank temperature

SETPOINTS CONT'D

SETPOINT SCREEN THREE OF THREE

Evaporation Tank Setpoints are based upon an adequate level of deodorizer over the heating element and headspace within the evaporation tank for vaporizing the deodorizer. Byers Scientific recommends that the setpoints for Evaporation Tank be kept at the initial set value.

Evaporation Tank Lo: Setpoint value 50%

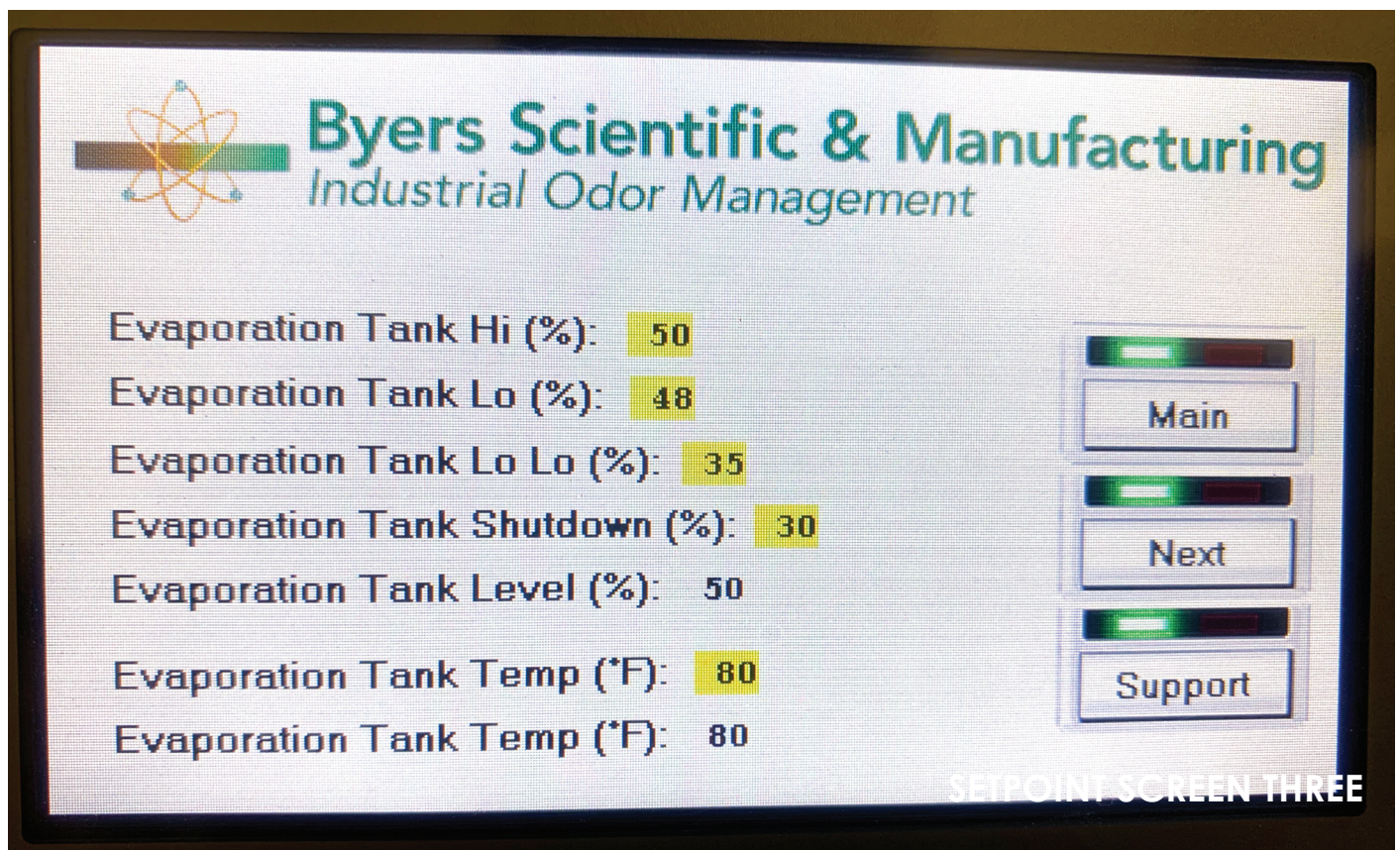
Evaporation Tank Lo Lo: Setpoint value 48%

Evaporation Tank Lo Lo Lo: Setpoint value 40%
A text/email alert will go out when this setpoint is reached that the system is shut down to prevent harm to components

Evaporation Tank Level: Read-only value of current storage tank level

Evaporation Tank Temperature: Maximum setpoint value 95°F, minimum 80°F. This value can be set by Byers Scientific for scheduling via the SCADA.

Evaporation Tank Temperature: Read-only value of current storage tank temperature



SUPPORT

Provides contact information for Byers Scientific & Manufacturing for further support.



The image shows a support screen for Byers Scientific & Manufacturing. At the top left is a logo consisting of a stylized atom with three orbiting electrons and a horizontal bar with a green-to-red gradient. To the right of the logo, the text reads "Byers Scientific & Manufacturing" in a large, bold, teal font, with "Industrial Odor Management" in a smaller, teal font below it. In the center-left area, the address "2332 W. Industrial Park Drive" and "Bloomington, IN 47404" is displayed. Below the address is the phone number "812-269-6218" and the email address "info@byers-scientific.com". On the right side, there is a rectangular button with a green-to-red gradient bar at the top and the word "Main" in the center. At the bottom right corner of the screen, the text "SUPPORT SCREEN" is displayed in a bold, black font.

Byers Scientific & Manufacturing
Industrial Odor Management

2332 W. Industrial Park Drive
Bloomington, IN 47404

812-269-6218

info@byers-scientific.com

Main

SUPPORT SCREEN



ECOSORB CNB 107P

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 04/04/2019 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : ECOSORB CNB 107P

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Odor Neutralizer
Recommended use : Odor Neutralizer
Restrictions on use : None known

1.3. Supplier

Manufacturer

OMI Industries
1300 Barbour Way
Rising Sun, IN 47040 - U.S.A
T 1-847-304-9111

1.4. Emergency telephone number

Emergency number : 1-800-662-6367, Monday - Friday 8 am to 5 pm CST

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification
Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling
No labeling applicable

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions. Keep out of reach of children.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

ECOSORB CNB 107P

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This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation : Move to fresh air if necessary.
First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : No other effects known.
Expected Symptoms/Effects, Acute and Delayed : No known effects from this product.
Symptoms/effects : None under normal use.
Symptoms/effects after inhalation : No effects known.
Symptoms/effects after skin contact : No effects known.
Symptoms/effects after eye contact : No effects known.
Symptoms/effects after ingestion : No effects known.
Symptoms/effects upon intravenous administration : No other effects known.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Specific hazards arising from the chemical

- Fire hazard : Not flammable.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Stop leak if safe to do so.

ECOSORB CNB 107P

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6.1.1. For non-emergency personnel

Protective equipment : Gloves and safety glasses recommended.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent liquid from entering sewers, watercourses, underground or low areas.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Does not require any specific or particular technical measures.
Storage conditions : Store in a well-ventilated place. Keep cool.
Incompatible products : Oxidizing agent. Strong acids.
Incompatible materials : Keep away from strong acids and strong oxidizers.
Storage temperature : 4 - 29 °C 40°F and 85°F Allowing product to freeze may cause layering.
Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Information on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) acids. oxidizing agents.
Storage area : Keep container in a well-ventilated place. Store in a cool area. Keep out of direct sunlight. Store in a well-ventilated place.
Special rules on packaging : Keep only in original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

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Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Gloves and safety glasses recommended.

Hand protection:

Protective gloves. Recommended

Eye protection:

Safety glasses. Recommended

Skin and body protection:

None under normal use

Respiratory protection:

Respiratory protection not required in normal conditions

Thermal hazard protection:

Not applicable.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: White liquid.
Color	: White
Odor	: Characteristic odour
Odor threshold	: No data available
pH	: 6 - 8.5
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: \approx 99 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: \approx 0.99
Solubility	: Soluble in water.
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: \approx 1.1 cSt
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

ECOSORB CNB 107P

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing agent. Strong acids.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified
Skin corrosion/irritation	: Not classified pH: 6 - 8.5
Serious eye damage/irritation	: Not classified pH: 6 - 8.5
Respiratory or skin sensitization	: Not classified.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: ≈ 1.1 cSt
Likely routes of exposure	: Inhalation. Dermal.
Potential Adverse human health effects and symptoms	: No other effects known.
Expected Symptoms/Effects, Acute and Delayed	: No known effects from this product.
Symptoms/effects	: None under normal use.

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Symptoms/effects after inhalation : No effects known.
Symptoms/effects after skin contact : No effects known.
Symptoms/effects after eye contact : No effects known.
Symptoms/effects after ingestion : No effects known.
Symptoms/effects upon intravenous administration : No other effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

ECOSORB CNB 107P	
Persistence and degradability	Biodegradability in water: no data available.

12.3. Bioaccumulative potential

ECOSORB CNB 107P	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

ECOSORB CNB 107P	
Ecology - soil	The product is predicted to have high mobility in soil. Soluble in water.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste) : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Avoid release to the environment.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

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according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. International regulations

CANADA

ECOSORB CNB 107P

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

ECOSORB CNB 107P

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

ECOSORB CNB 107P

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Korean ECL (Existing Chemicals List)
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information : None.

Abbreviations and acronyms:

ECOSORB CNB 107P

Safety Data Sheet

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ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
IARC	International Agency for Research on Cancer
OECD	Organisation for Economic Co-operation and Development
LD50	Median lethal dose
SDS	Safety Data Sheet
STP	Sewage treatment plant

Hazard Rating

Health	: 0 Minimal Hazard - No significant risk to health
Flammability	: 0 Minimal Hazard - Materials that will not burn
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	: B B - Safety glasses, Gloves

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

Attachment 2

Santa Barbara APCD May 2018 CAPCOA Presentation

Cannabis Odor Control Solutions

CAPCOA SPRING MEMBERSHIP MEETING

Santa Barbara County Air Pollution Control District

Our Mission: To protect the people and the environment
of Santa Barbara County from the effects of air pollution.

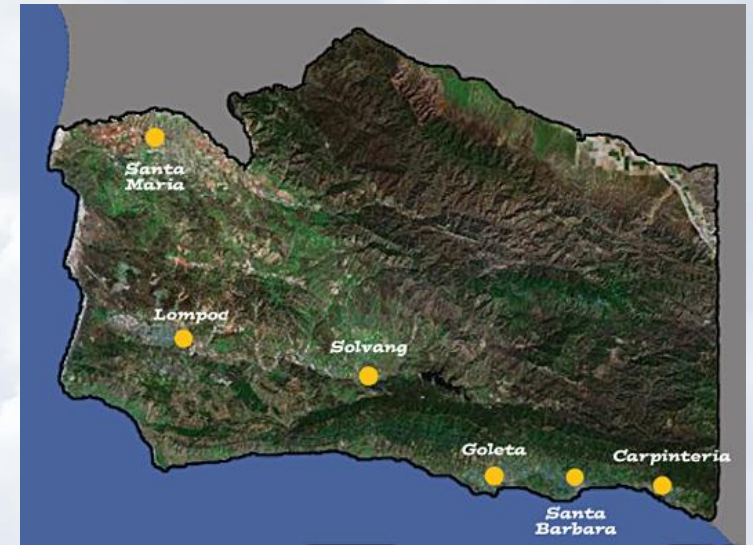
Aeron Arlin Genet
Director / APCO

May 15, 2018



Cannabis in Santa Barbara County

- Santa Barbara County currently has the most temporary cannabis cultivation licenses in California^{1,2}
- 52 cannabis cultivators in Carpinteria alone³
- Odor generated from cannabis cultivation is a significant nuisance issue for residents



Odors From Cultivation

- Odors produced during cannabis flowering stage
- For large-scale operations, significant portion of plants will be flowering at any given time
- Cannabinoids, Terpenes, Sesquiterpenes



Odor Neutralizers

- Process works like this: chemical reaction occurs between the odors and compounds in the neutralizer to scrub the smell
- Neutralizer is converted into a vapor that gets dispersed
 - Odors “surf” the airstream
 - Odors & neutralizer more likely to meet if in the airstream together
- One example shown here: Ecosorb CNB 100 odor neutralizer



Vapor-Phase Odor Control Technology

- Vapors go through PVC piping around perimeter of greenhouse
- PVC piping contains holes for release of odor neutralizer
- Size and number of holes unique to each installation but designed to minimize pressure drop



<http://byers-scientific.com/assets/bsm-vapor-system-v01.pdf>

Odor Control System Process Flow

Holding Tank
(Ecosorb CNB 100)

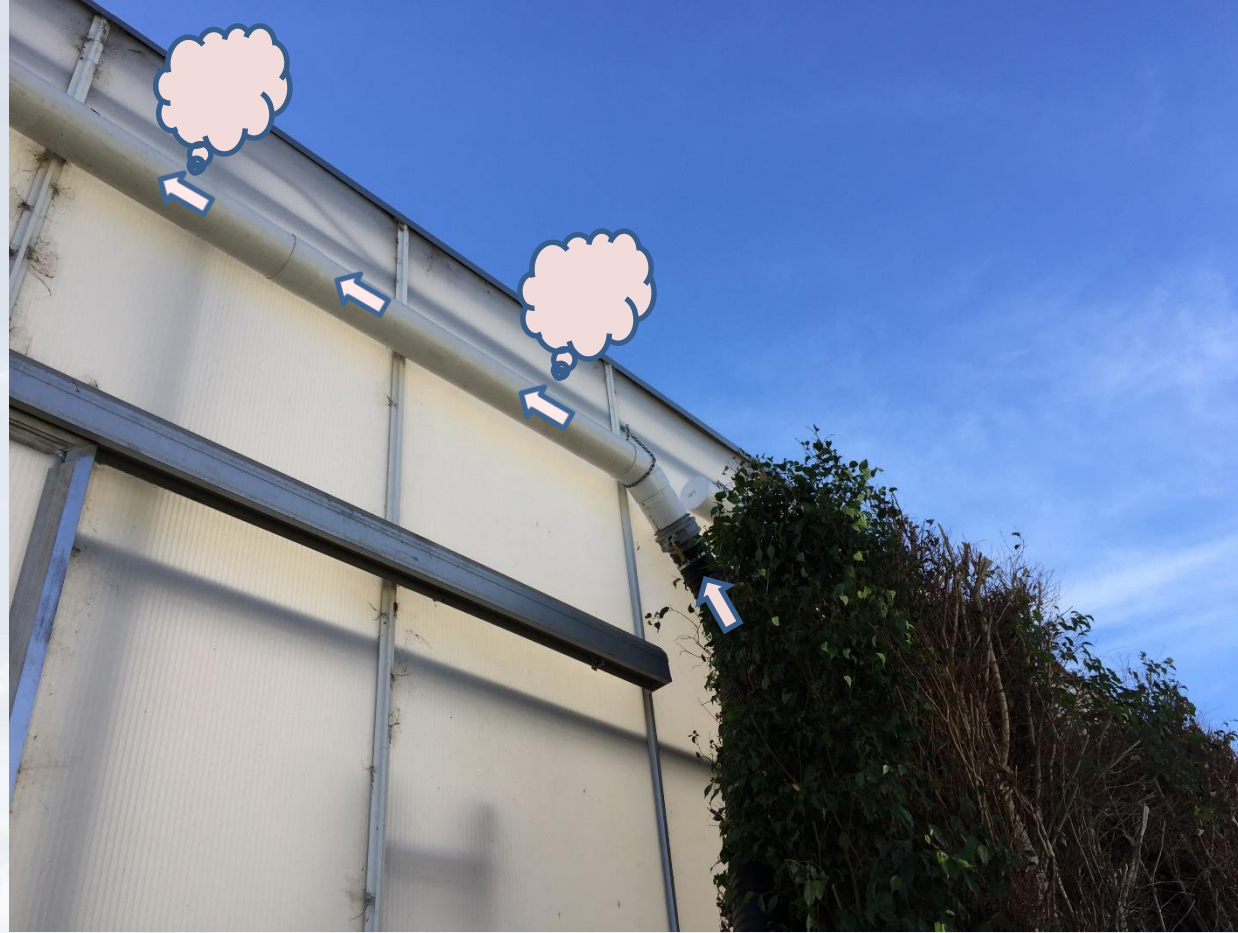
High pressure, low
volume blower



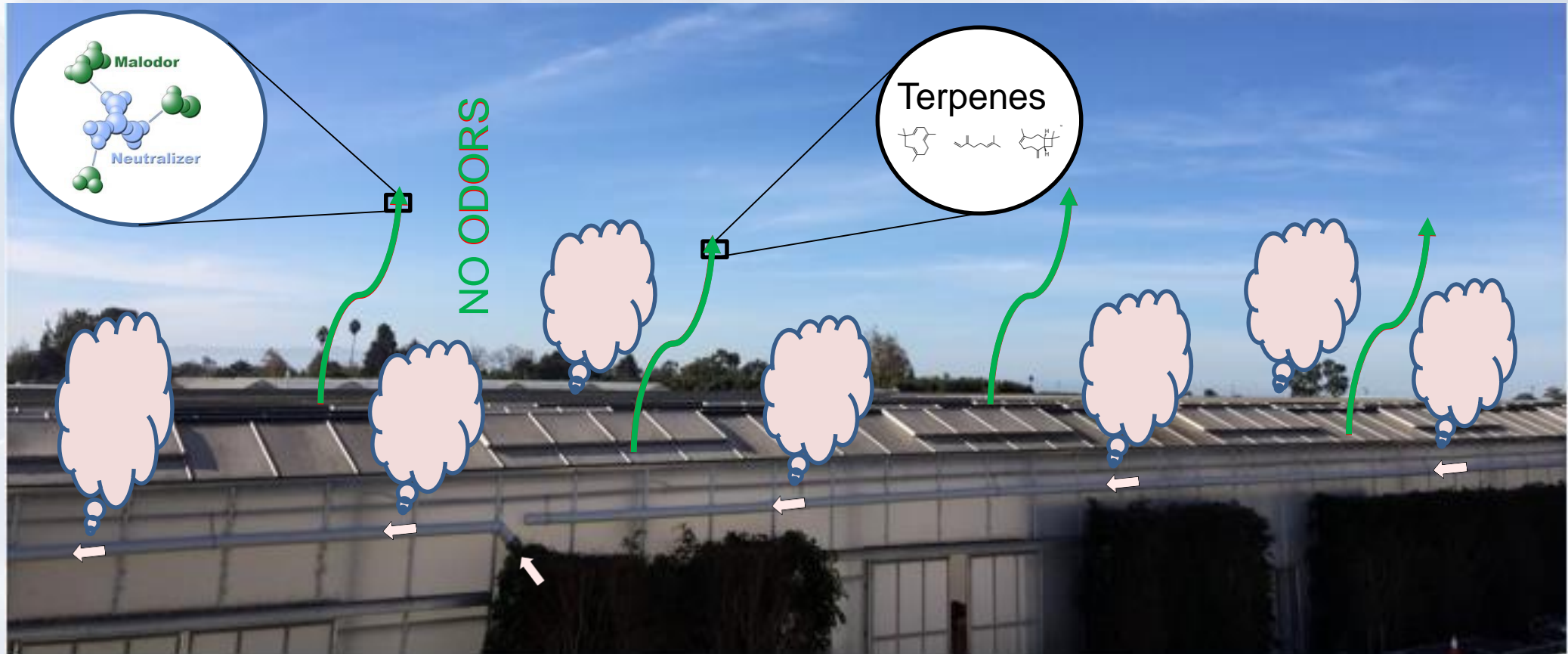
Evaporation Tank
(confidential)



Odor Control System Process Flow Cont.



Odor Control System Process Flow Cont.

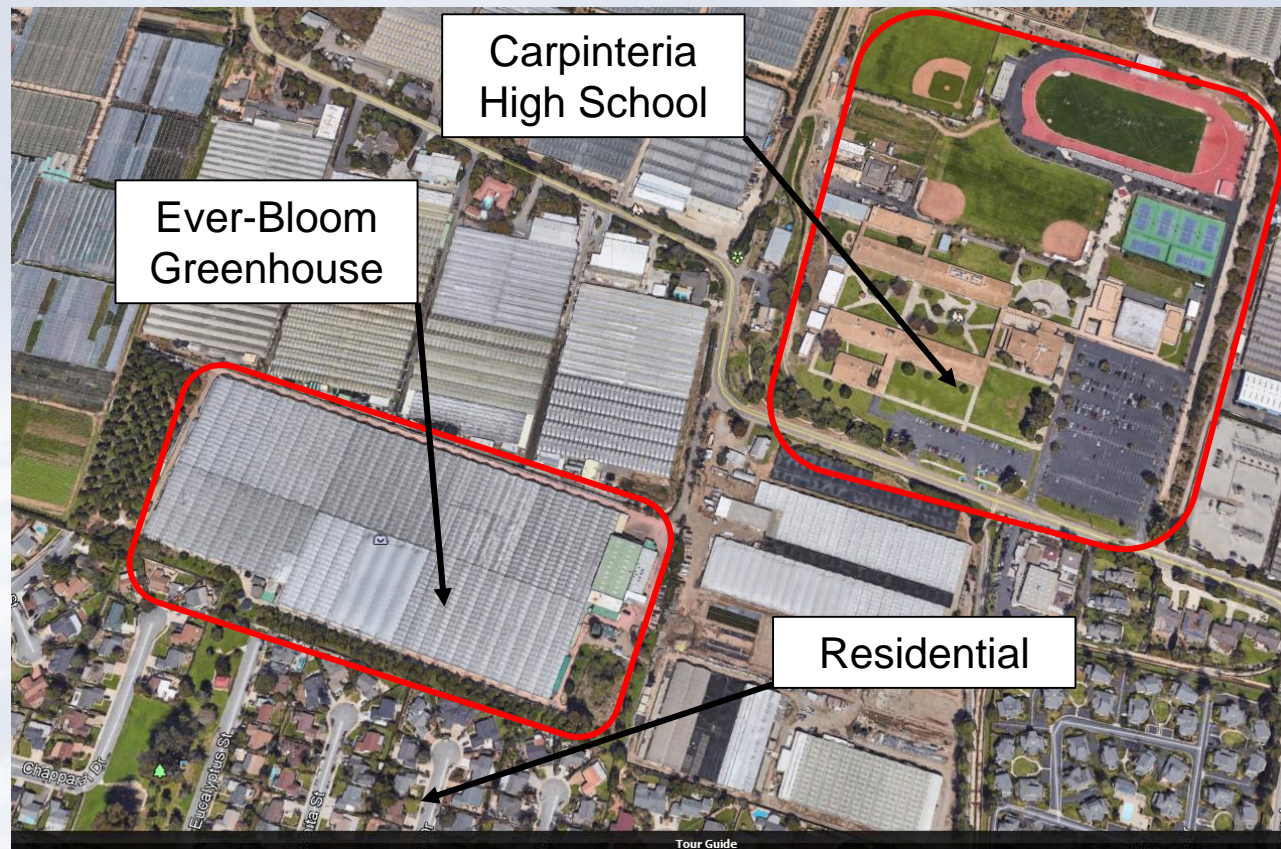


Considerations

- Ecosorb CNB 100 example:
 - Throughput ~ 3.5 gallons per day
 - A pine/citrus scent from overproduction of neutralizer vapor
 - Approximate capital cost \$38,000 - \$53,000, including installation
 - Annual operating cost (based on typical large-scale greenhouse operations) is \$45,000 – \$50,000 per year

Ever-Bloom Test Case

- 15-acre greenhouse located near sensitive receptors
- 650,000 sq. ft cannabis growing operation, previously grew flowers
- Installed a Byers-Scientific & Manufacturing vapor-phase odor control system in November 2017



Ever-Bloom Test Case Cont.

- Ever-Bloom invited District staff to inspect odor-control system in February 2018
- District staff toured the greenhouse and odor-control system
- Odor-control system was operating during the visit and appeared to be working as advertised
- Pungent odors from inside the greenhouse could not be detected directly outside the greenhouse or at the property line

Other Applications

- System currently installed at 14 cannabis operations in Carpinteria
- System can be used to control odors from:
 - Solid Waste (landfills, waste transfer stations, compost, pulp & paper)
 - Wastewater Treatment
 - Commercial (food waste, trash compactors, food processing)
 - Agricultural (dairy, poultry and hog farming)
- Also operational at Miramar Landfill in San Diego as well as composting and landfill operations throughout the US

Questions

Ecosorb CNB 100 Data Sheet



Byers Scientific & Manufacturing
Industrial Odor Management

2332 W. Industrial Park Drive
Bloomington, IN 47404
Ph: (812) 269-6218

ECOSORB® CNB 100 TECHNICAL DATA SHEET



Ecosorb® CNB 100 is an odor neutralizer designed specifically for the control of cannabis odors. It was designed to remove the odorous chemicals that are produced when growing cannabis. Ecosorb® CNB 100 is effective on the main groups of odor causing chemical compounds found in cannabis including but not limited to the cannabinoids, terpenes, and sesquiterpenes groups.

Ecosorb® CNB 100 can be diluted with water or used neat depending on the application and delivery equipment. Dilution with water ranges from roughly 1 part in 10 of water to 1 part in 100 of water, depending on the type of delivery system and odor intensity. This product is a blend of plant oils, food grade surfactant, and purified water.

Ecosorb® CNB 100 should never be applied in a manner that would allow it to come in direct contact with the cannabis plant, water or soil.

FEATURES

- True odor neutralized
- Biodegradable and non-toxic
- Environmentally friendly
- No measurable flash point
- Scientifically proven

ADVANTAGES

- No masking of odors
- Usually no permits required
- Safe for employees and neighbors
- Safe for all environments
- It performs as advertised

PHYSICAL PROPERTIES

pH: ~6.0
Specific Gravity: ~0.99
Boiling point: ~208° F
Appearance: Milky White
Odor: Slight Citrus

HMIS CLASSIFICATION

Health: 0 Flammability: 0 Reactivity: 0 Protective Equipment: B



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ECOSORB® CNB 100 TECHNICAL DATA SHEET



ALL INGREDIENTS CAN BE FOUND LISTED ON THE FOLLOWING CHEMICAL SUBSTANCE INVENTORIES:

United States: TSCA South Korea: ECL and KECI
Canadian: DSL China: IECSC
European: EINECS Japan: ENCS
Australian: AICS New Zealand: NZIoC

REGULATORY

- Ecosorb® CNB 100 is non-hazardous by OSHA Hazard Communication Standard 29 CFR 1910.1200
- This product does NOT contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm.
- Not subject to reporting requirements of the United States SARA Section 313.
- Uncontrolled product according to WHMIS classification criteria.

HANDLING AND PACKAGING

Ecosorb® CNB 100 is shipped in HDPE containers. It is recommended to store the product in the original container. The product should be stored in a well-ventilated place, in a cool area, out of direct sunlight, and tightly sealed. Store the product above 35°F and below 85°F. Allowing the product to freeze is especially damaging and will disrupt the emulsion. Extended exposure to higher temperatures may cause separation. Ecosorb® CNB 100 is incompatible with oxidizing agents and strong acids. This product does not burn. Always shake or mix before using.

DISPOSAL AND CLEANUP

Wash with water or soap and water. The product is not hazardous to humans, animals, or the environment. Dispose of in accordance with local, regional, and national and/or international regulations.

CONTAINERS

Ecosorb® CNB 100 is available in the following sizes:
5 Gallon Pails
55 Gallon Drums
275 Gallon Containers

DISTRIBUTOR OF

Ecosorb® *Remarkably effective. Surprisingly simple.*



One Corporate Drive, Suite 100
Long Grove, IL 60047, USA
Phone: 800.662.6367 Fax: 847.304.0989
www.omi-industries.com

Attachment 3

December 8, 2017; CPF Associates Screening Health Assessment of Waterless Vapor Phase Odor Control Technology



Scientific Research and Consulting

MEMORANDUM

TO: Marc Byers, Byers Scientific & Manufacturing
FROM: Sarah Foster, CPF Associates, Inc.
DATE: December 8, 2017
RE: Screening Health Assessment of Waterless Vapor Phase Odor Control Technology

INTRODUCTION AND SUMMARY

Byers Scientific & Manufacturing has developed a waterless vapor phase odor control technology which releases an Ecosorb® odor control product in gaseous form. Byers requested CPF Associates to conduct a health assessment of this system to evaluate its potential air impacts relative to inhalation criteria derived to be protective of public health. This memo describes the health assessment and its conclusions.

The application scenario evaluated in this study was defined by Byers. It assumed that Ecosorb® CNB 100, a proprietary odor control product, would be fed into the vapor phase odor control technology at a rate of 2.5 gallons per day and, once volatilized, would be distributed as a gas through a pipe. Air flow through the pipe would be generated by a fan set at roughly 300 cubic feet per minute and the product would be released from upward-facing holes spaced at nine foot intervals along the length of the pipe. The pipe would be placed around the outside perimeter of a building at a height of 10-15 feet (3.0-4.6 m). The total pipe length would vary from about 575-3,150 feet (175-960 m), depending on the building's footprint. The composition of CNB 100 was provided to CPF by its manufacturer, OMI Industries, under the understanding that this is confidential business information.

The assessment was a screening-level evaluation that relied on conservative, health-protective assumptions. These assumptions are expected to overestimate potential air concentrations, exposures and risks associated with the evaluated scenario.

The assessment showed that operation of the Byers-defined application scenario would not be expected to pose public health concerns. Potential air concentrations calculated using a screening-level model in the immediate vicinity of the distribution pipe were below available health-protective inhalation criteria.

SCREENING HEALTH ASSESSMENT

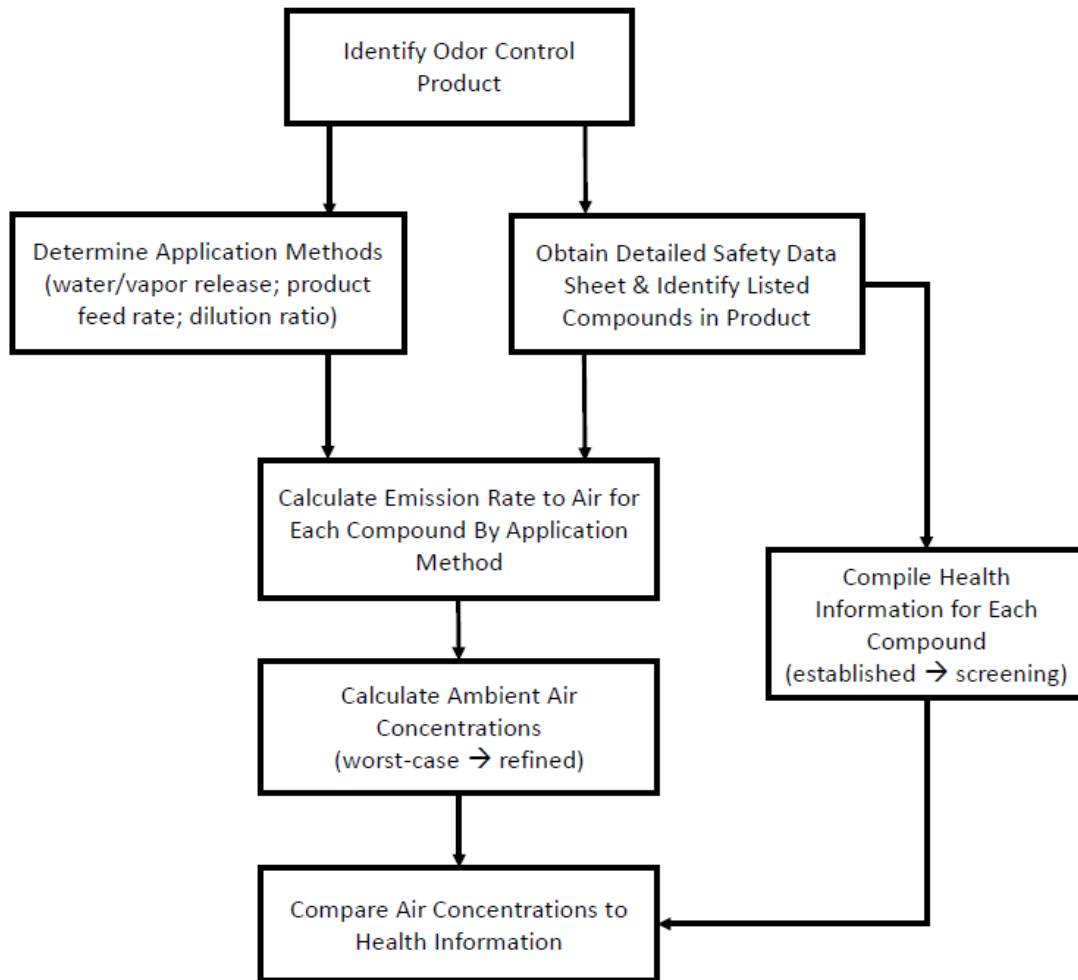
Methodology

CPF has developed a methodology to evaluate odor control product use at landfills and other potentially odiferous facilities. This methodology is based on well-accepted health risk assessment principles and has been used to objectively assess more than one dozen odor control products delivered using a variety of application systems.



A flow chart of the methodology is provided in Figure 1. Broadly defined, the methodology combines information about odor control product composition, odor control application methods, health effects information and modeled ambient air concentrations to evaluate the potential for public health concerns via inhalation.

Figure 1
Overview of Odor Control Product Health Assessment Methodology



Consistent with standard health risk assessment practice, the methodology can be applied in a stepwise fashion of increasing refinement, as warranted. The initial screening-level evaluation employs conservative, health-protective assumptions which are intended to overestimate potential air concentrations, exposures and potential risks. If the screening-level evaluation does not demonstrate a potential for health concerns, then no further assessment is needed. If not, more refined evaluations can be performed to further evaluate an odor control system under more realistic conditions.

Assessment of Byers Vapor Phase Odor Control System

Application Method

In this assessment, a screening-level evaluation was conducted of an application setup defined by Byers. It was assumed that Ecosorb® CNB 100, an odor control product, would be fed into the vapor phase odor control technology at a rate of 2.5 gallons per day and, once volatilized, would be distributed as a gas inside a pipe of variable length, with air flow generated by a fan set at roughly 300 cubic feet per minute. The pipe would be placed around the outside perimeter of a building, close to but below the roof edge, at a height of 10-15 feet (3.0-4.6 m) and the total pipe length would vary from about 575-3,150 feet (175-960 m), depending on the footprint of the building. The vapor would be released from holes, each roughly 0.16 inch (4 mm) in diameter and facing upwards, placed every nine feet along the pipe length. Due to the pressure created by the fan, the vapor is expected to be emitted at a velocity of more than 100 ft/sec (>45 m/sec) from each hole.

Odor Control Product

The odor control product evaluated was Ecosorb® CNB 100. Its composition was provided to CPF by its manufacturer, OMI Industries, under the understanding that this is confidential business information. The product is comprised of two polysorbate surfactants and a blend of citrus and pine oils with the remainder being water.¹ Both polysorbate surfactants are widely used in hundreds of industrial, consumer, medicinal and personal care products. The Safety Data Sheet (SDS) for CNB 100 is provided in Attachment A. This SDS includes information about the product, its hazards and instructions for handling, disposal, transport, first-aid, fire-fighting and exposure control measures.

Emission Rates into Air

Emission rates into air for the product as a whole and its individual constituents were calculated based on the application setup described above and the Ecosorb® CNB 100 composition. The method for calculating emission rates was designed to ensure that potential air impacts would be overestimated in the interests of health protectiveness. First, it was assumed that 100% of the product would be volatilized in the odor control technology and transported down the distribution pipe. Second, each constituent in CNB 100 was assumed to be present at the maximum percentage provided by OMI. Third, the calculated emission rates from all holes were summed and the resulting cumulative emission rate was then assumed to be released from a shorter section of pipe on only one side of a building, rather than dispersed along the entire pipe surrounding all four building sides. Overall, these assumptions are expected to overestimate potential emission rates, and thus also air concentrations.

Ambient Air Concentrations

Potential air concentrations were calculated in the immediate vicinity of the distribution pipe using a screening method called a box model. This approach assumes that emissions are completely mixed in a

¹ The percentages of each polysorbate surfactant and the citrus/pine oil blend in Ecosorb CNB 100 are a proprietary trade secret, however, they were provided to CPF for the purposes of this analysis. In accordance with a Confidentiality Agreement, this composition is not specifically provided in this memo. The product's Safety Data Sheet is included in Attachment A.

box having a specified width and height through which wind is blowing.² It is generally considered more likely to overestimate than underestimate concentrations because the model does not take into account air mixing and dispersion outside the box, atmospheric reactions or settling (deposition). All of these processes, which naturally occur in the outdoor environment, would result in lower concentrations than those modeled. As a result, the air concentrations due to emissions are expected to be overestimated.

For this assessment, the box was defined to conservatively estimate potential air concentrations that might occur in the immediate vicinity of the distribution pipe (i.e., within roughly 15 feet). It was assumed to extend outward 15 feet (4.57 m) from the side of the building and upwards to a building height of 18 feet (5.5 m), with air flowing through this cross-section at a velocity of 1 mile per hour (0.447 m/sec), representative of a calm wind speed. Air concentrations would be lower if a larger box and higher wind speed were used.³

Health Criteria for Odor Control Product

The next step in the assessment involved compilation of available health criteria for the odor control product and its constituents. These criteria reflect concentrations in air (in mg/m³) or average daily intakes (in mg/kg body weight/day) that are protective of public health. They are developed by regulatory agencies and public health scientists based on scientific information about the toxicity of chemical substances. When these values are derived, safety factors are generally incorporated to ensure that they are protective of human health.

Numerous information sources were searched to identify available health effects criteria.⁴ Criteria were able to be identified for all constituents in Ecosorb® CNB 100 - either for the listed constituent itself (each polysorbate surfactant) or for a component in the constituent (citrus and pine oil blend). For example, for the blend of pine and citrus oils, dominant components in orange, lime, lemon, tangerine, grapefruit and pine oils were identified from published studies, and then acute short-term inhalation criteria were compiled as available for each of these. Among the dominant components, acute short-term inhalation criteria were available for limonene, α -terpineol, and α - and β -pinene. The lowest among these three criteria (59 mg/m³) was selected to evaluate the entire oil blend.

In addition to identifying criteria for constituents in Ecosorb® CNB 100, the results from acute inhalation toxicity studies were used to derive an inhalation criterion for the product as a whole. Acute inhalation toxicity studies have been conducted for two Ecosorb® products that are used to

² American Society for Testing and Materials (ASTM). 1994. Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites. Philadelphia, PA. ES 38-94.

³ The equation for calculating air concentrations in the simple well-mixed box model is: $Ca = (ER * 1,000) / (H * W * V)$, where Ca = Air concentration (mg/m³), ER = Emission rate (g/sec), 1,000 = Conversion factor (1,000 mg/g), H = Box height (5.5 m), W = Box width (4.57 m), and V = Air velocity through box (0.447 m/sec).

⁴ Information sources searched included: California Environmental Protection Agency (CALEPA) Reference Exposure Levels (RELs), US Environmental Protection Agency's (USEPA) Risk-Based Screening Levels (RSLs), USEPA's Acute Exposure Guideline Levels (AEGs), American Industrial Hygiene Association's Emergency Response Planning Guidelines (ERPGs), Temporary Emergency Exposure Limits (TEELs) developed by the DOE Office of Emergency Management, US National Library of Medicine PubChem databases, European Union and European Food Safety Authority assessments on food additives, Safety Assessments prepared by Cosmetic Ingredient Review Expert Panels, and Japan Food Safety Commission reports on food additives.



formulate CNB 100 (Ecosorb® 606 and Ecosorb® 206). The acute inhalation toxicity studies examined the occurrence of adverse effects on rats exposed to each product for four hours at a high concentration in aerosolized form (2,220 mg/m³ for Ecosorb® 606 and 2,080 mg/m³ for Ecosorb® 206). Observations of the test animals for 12 different health endpoints (ranging from lacrimation to tremors to death) were tabulated during the exposure period and for 14 days after the exposure ceased. No adverse effects were observed at either tested air concentration. The lowest of the two no observed adverse effect levels (NOAELs) was divided by an uncertainty factor of 100 to derive the criterion for this assessment (21 mg/m³).⁵

Compare Air Concentrations to Health Information

The potential for a health concern was evaluated by comparing the calculated air concentrations to the health information. If the calculated air concentration for a compound or odor control product is lower than the corresponding inhalation health criterion, adverse public health effects would not be expected to occur under the assumed odor control application scenario. If an air concentration exceeds its criterion, this does not mean that adverse effects will occur among the general public because of the conservative assumptions included in both the derivation of the criterion and the calculation of air concentrations. Rather it indicates that further investigation may be warranted, using more refined and realistic assumptions, to help determine whether or not levels in air may present a potential public health concern.

In this analysis, the potential air concentrations calculated in the immediate vicinity of the distribution pipe were below the available health-protective criteria. As noted above, the air concentrations were calculated using a screening-level box model and assuming total emissions from a pipe around four sides of a building were all released from a shorter section of pipe along only one side of a building. The calculated air concentration of the product as a whole was two times lower than its criterion. The concentrations of the individual constituents in CNB 100 were lower than their respective criteria by factors of 370 to 1,760.

Discussion of Uncertainties

The results of health assessments inherently reflect some uncertainty because of the complexities involved in the analysis. In accordance with standard practice, key uncertainties affecting this assessment are discussed here. In general, uncertainties in health assessments, including this one, are addressed by using conservative (i.e., health protective) assumptions which collectively produce results much more likely to be overestimated than underestimated. This adds a margin of safety to the results.

Conservative assumptions used in this assessment have been noted above, such as concentrating all emissions from a pipe around four sides of a building into one pipe section along only one building side, assigning small dimensions (i.e., 15 feet by 18 feet) to the simple box model, assuming each constituent was present in the product at the maximum percent noted by OMI, and assessing the blend of citrus and pine oils using only the lowest available inhalation health criterion among those for dominant components of these oils. Deriving a health-protective criterion for the product as whole

⁵ Consistent with screening-level methods for deriving reference air concentrations, the uncertainty factor of 100 incorporated one factor of 10 for animal to human extrapolation and another factor of 10 for human variability.



based on a NOAEL from a toxicity study that evaluated only one exposure level was another conservative assumption, because the actual NOAEL may be much higher. Some uncertainties were not explicitly addressed in this study, such as whether the form of emissions might vary in extremely cold temperatures (e.g., gas versus aerosols), whether the composition of volatilized constituents might vary after long periods of operation and the effect of buildings on dispersion and mixing of emissions. The modeling of air concentrations was conducted for one building using a simple screening-level model with conservative input assumptions; more refined calculations of potential air concentrations could be estimated using more sophisticated methods (e.g., refined air dispersion modeling, wind tunnel modeling or computational fluid dynamic modeling). Overall, these uncertainties are not expected to change the conclusions of this assessment.

This assessment addressed only the inhalation route of exposure with a focus on the general public. Not considering other exposure routes (e.g., dermal) is appropriate given that the general public would not be expected to come into contact with the odor control product in any manner other than through the air. With respect to occupational situations, which were not addressed here, this product should only be used in accordance with its SDS, any label instructions, and regulatory requirements of Cal/OSHA.

Conclusions

Based on the methods and assumptions used, this screening-level assessment showed that operation of the Byers-defined application scenario would not be expected to pose public health concerns. Potential air concentrations calculated using a screening-level model in the immediate vicinity of a distribution pipe were below available health-protective inhalation criteria. The calculated air concentration of the product as a whole was two times lower than its criterion. The concentrations of evaluated individual constituents in CNB 100 were lower than their respective criteria by factors of 370 to 1,760.

ABOUT CPF ASSOCIATES

CPF Associates, Inc. is an independent Maryland-based scientific and research consulting firm with in-depth experience and expertise in the health and environmental evaluation of air emission sources, waste management technologies, industrial facilities and waste sites. CPF applies state-of-the-art scientific tools - risk assessment, life-cycle analysis, epidemiology and environmental impact analysis - to address public health and environmental issues. In over 30 years of professional association, the CPF Principals have conducted hundreds of projects for energy-from-waste (EfW) facilities, landfills, incinerators, biosolids management facilities, recycling plants, transfer stations and other types of treatment units. The principal investigator for this assessment was Ms. Sarah Foster, a Principal with CPF Associates. Internal review was provided by Dr. Paul Chrostowski, also a Principal with CPF.

ATTACHMENT A
SAFETY DATA SHEET



ECOSORB CNB 100

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 12/04/2017 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : ECOSORB CNB 100

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Odor Neutralizer
Recommended use : Odor Neutralizer
Restrictions on use : None known

1.3. Details of the supplier of the safety data sheet

Manufacturer

OMI Industries
1300 Barbour Way
Rising Sun, IN 47040 - U.S.A
T 1-847-304-9111

1.4. Emergency telephone number

Emergency number : 1-800-662-6367, Monday - Friday 8 am to 5 pm CST

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

2.3. Other hazards

Other hazards not contributing to the classification : None under normal conditions. Keep out of reach of children.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

3.2. Mixtures

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation : Move to fresh air if necessary.

-
- First-aid measures after skin contact : Wash skin with plenty of water.
First-aid measures after eye contact : Rinse eyes with water as a precaution.
First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/effects : None under normal use.
Symptoms/effects after inhalation : No effects known.
Symptoms/effects after skin contact : No effects known.
Symptoms/effects after eye contact : No effects known.
Symptoms/effects after ingestion : No effects known.
Symptoms/effects upon intravenous administration : No other effects known.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media : No unsuitable extinguishing media known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

- Firefighting instructions : Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Stop leak if safe to do so.

6.1.1. For non-emergency personnel

- Protective equipment : Gloves and safety glasses recommended.
Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment. Prevent liquid from entering sewers, watercourses, underground or low areas.

6.3. Methods and material for containment and cleaning up

- For containment : Collect spillage.
Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13. For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Does not require any specific or particular technical measures.
- Storage conditions : Store in a well-ventilated place. Keep cool.
- Incompatible products : Oxidizing agent. Strong acids.
- Incompatible materials : Keep away from strong acids and strong oxidizers.
- Storage temperature : 4 - 29 °C 40°F and 85°F Allowing product to freeze may cause layering.
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
- Information on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) acids. oxidizing agents.
- Storage area : Keep container in a well-ventilated place. Store in a cool area. Keep out of direct sunlight. Store in a well-ventilated place.
- Special rules on packaging : Keep only in original container.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Exposure controls

- Appropriate engineering controls : Ensure good ventilation of the work station.

8.3. Individual protection measures/Personal protective equipment

- Personal protective equipment : Gloves and safety glasses recommended.
- Hand protection : Protective gloves. Recommended.
- Eye protection : Safety glasses. Recommended.
- Skin and body protection : None under normal use.
- Respiratory protection : Respiratory protection not required in normal conditions.
- Thermal hazard protection : Not applicable.
- Environmental exposure controls : Avoid release to the environment.
- Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: White liquid.
Color	: White
Odor	: Characteristic odour
Odor threshold	: No data available
pH	: 6 - 8.5
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: ≈ 99 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: ≈ 0.99
Solubility	: Soluble in water.
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: ≈ 1 cSt
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Oxidizing agent. Strong acids.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Dermal
 Acute toxicity : Not classified
 Skin corrosion/irritation : Not classified
 pH: 6 - 8.5
 Serious eye damage/irritation : Not classified
 pH: 6 - 8.5
 Respiratory or skin sensitization : Not classified.
 Germ cell mutagenicity : Not classified
 Carcinogenicity : Not classified
 Reproductive toxicity : Not classified
 Specific target organ toxicity – single exposure : Not classified
 Specific target organ toxicity – repeated exposure : Not classified
 Aspiration hazard : Not classified
 Potential Adverse human health effects and symptoms : No other effects known.
 Symptoms/effects after inhalation : No effects known.
 Symptoms/effects after skin contact : No effects known.
 Symptoms/effects after eye contact : No effects known.
 Symptoms/effects after ingestion : No effects known.
 Symptoms/effects upon intravenous administration : No other effects known.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

ECOSORB CNB 100	
Persistence and degradability	Biodegradability in water: no data available.

12.3. Bioaccumulative potential

ECOSORB CNB 100	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

ECOSORB CNB 100	
Ecology - soil	The product is predicted to have high mobility in soil. Soluble in water.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Avoid release to the environment.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

ALL COMPONENTS OF THIS PRODUCT ARE LISTED, OR EXCLUDED FROM LISTING, ON THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY TOXIC SUBSTANCES CONTROL ACT (TSCA) INVENTORY

15.2. International regulations

CANADA

ECOSORB CNB 100

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

ECOSORB CNB 100

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

ECOSORB CNB 100

Listed on the AICS (Australian Inventory of Chemical Substances)
 Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
 Listed on NZIoC (New Zealand Inventory of Chemicals)
 Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
 Listed on the Korean ECL (Existing Chemicals List)
 Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Training advice : Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information : None.

ABBREVIATIONS AND ACRONYMS:	
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
IARC	International Agency for Research on Cancer
OECD	Organisation for Economic Co-operation and Development
LD50	Median lethal dose
SDS	Safety Data Sheet
STP	Sewage treatment plant

Hazard Rating

Health : 0 Minimal Hazard - No significant risk to health

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Personal protection : B
B - Safety glasses, Gloves

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product