microbator® PC-78

A true deodorizing additive for coolants that's nontoxic, nonhazardous, nonallergenic & noncorrosive.

Most coolant additives simply mask malodors. Not Microbator PC-78. Its unique oxidizing action effectively arrests malodor caused by virae, fungi, bacteria and coliform densities, including *Escherichia coli*, *Klebsiella aerogenes* and *Enterobacter aerogenes*.

It's safe and easy to use

Microbator PC-78 is a *nontoxic, nonhazardous, non-allergenic, noncorrosive* microbistatic. It contains an oxidizer, non-ionic ethozylated detergent, chelating sequestering agent(s), methyl salicylate, and an approved coloring agent.

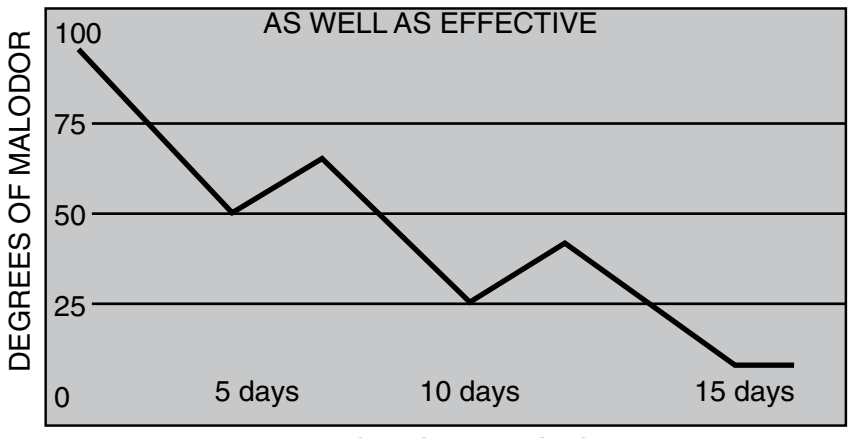
There is no free chlorine release with Microbator PC-78, and no residue. Ph 8-8.5.

While Microbator PC-78 can be safely applied to any surface or environment, normal cautionary procedures apply.

Economically efficient

Microbator PC-78 is a powerful additive and high dilutions (low concentrations) are recommended. For example 0.3 to 10.0 ppm provides static, inhibitory or preventive action. A range of 50.0 to 500.0 ppm produces instant malodor arrest.

MICROBATOR PC-78 IS LONG-LASTING AS WELL AS EFFECTIVE



Wide variety of applications

Microbator PC-78 is effective wherever malodors create environmental problems. As a coolant additive, it can be used in industrial sumps, lubricants, cutting oils, core processes, waste water, stack emissions, cooling towers, sludge pits, marine holding stations, ship's bilge areas and many more. Microbator PC-78 is equally effective on smaller jobs, such as animal housing, restroom surfaces, crawl spaces, galleys, floors and walls.

Technical Assistance

We will be glad to work with you and your chemists to sample, test and provide written analysis of specific problems where Microbator PC-78 could be of help.

Packaging

Microbator PC-78 is available in 5-gallon plastic containers, 55-gallon drums and 330 gallon poly totes. It has a shelf life in the original containers of at least one year.

punati chemical corp
environmental improvement through chemistry
ph 248-276-0101 • fax 248-276-0103 • 1160 N. Opdyke, Auburn Hills, MI 48326
www.punati.com Proudly Made in America

WAYNE STATE UNIVERSITY

SUBJECT: Evaluation of Antimicrobial Data Related to the Application of MICROBATOR to Contaminated Liquids and Surfaces
FROM: G.R. , Ph.D., Clinical-Environmental Microbiologist
TO: Mr. Bernard Shandler, President, Punati Chemical Company

I have reviewed the pertinent antimicrobial data related to the applications of Microbator PC-78 to liquid substrates and to inanimate surfaces and have concluded as follows:

The antimicrobial (antiviral, antifungal, and antibacterial) properties and efficacy of the oxidizing mode of action of this "tamed" product recommend its use in high dilutions (low concentrations), 0.3 to 10.0 ppm for static, inhibitory, or preventive activity, and a range of 50.0 to 500.0 ppm for cidal or killing activity. The latter depends upon densities of microbial contamination with which Microbator is placed in contact.

The action of Microbator is rapid, efficient, and monomolecular; no chemical residuals remain following its activity in contact with candidate substrates.

SUBJECT: Addendum to Microbiologic Evaluation Report, Same Date.
FROM: G.R. , Ph.D., Clinical-Environmental Microbiologist
TO: Mr. Bernard Shandler, President, Punati Chemical Company

As discussed previously, the active ingredients formulated into Aromabator and Microbator as antimicrobial and true deodorizing chemical components were found to be non-corrosive as reported by our primary supplier.

The microbiologic evaluation of the fifteen (15) coolant samples originating from GM, following experimental addition of Microbator, indicated a complete chemical compatibility. Further, immersion of various metals and metal alloys indicated that "internal" oxidizing capability of the formula to be non-corrosive following 14-days of exposure.

There are no releasable oxidants in the Microbator/Aromabator systems. They are bound to the molecule in such a way as to prevent ionizing/oxidizing deterioration of oxidizable metals, organic compounds, etc.

SUBJECT: Evaluation of Aromabator PC-80 for True Deodorant Properties
FROM: G.R. , Ph.D., Clinical-Environmental Microbiologist
TO: Mr. Bernard Shandler, President, Punati Chemical Company

This is to summarize my evaluation findings and observations related to the deodorizing properties of Aromabator PC-80.

Aromabator is a clear, transparent liquid which I found to be non-irritating to the skin when aerosolized onto the flexor surface of the forearm and allowed to air-dry. The sample was also found to be hypoallergenic when applied to abraided skin surfaces. No inflammatory response associated with allergic contact dermatitis was observed.

The mode of action of Aromabator was determined to be mildly oxidative in nature and the effects of same, when applied to sources of malodor, was found to be stable over a period of two to three weeks. The latter observation was dependent, in part, upon the concentration(s) of organic contamination associated with the source of the malodor. As applied to such malodor sources as toxic amines, hydrogen sulfide, proteolytic degradation products of microbial attack, and odors associated with lipid rancidity, I would classify Aromabator as a true deodorant. This would classify the product as effective in terms of eliminating the source(s) of the malodors rather than masking them on a temporary basis. Further, Aromabator appears to possess microbistatic properties in that it inhibits bacteria and fungi associated with the production of malodors.

This product should have many environmental applications where odor control is a problem. Such environments include the use and/or manufacture of plastics, oils, rubber, soaps, detergents, pulp and paper, iron-steel, waste degradation, tanning, etc.

ACDelco

Just a short note to let you know that I am well pleased with the performance of our products. The microbator kills and controls the odors caused by cutting compounds, also, in recirculated water used in paint systems. The aromabator is excellent in removing odors from restrooms, conference rooms, and other areas of bad odors.
Thanks again,

L.C.
Plant Engr. & Tool Rooms

DAIMLERCHRYSLER

We just wanted to let you know the satisfaction we have had with Punati Chemical and your product, Microbator PC-78.

Your product was introduced into our facility to eliminate odors and bacteria associated with our metalworking fluids washers. Since that time, we have experienced no environmental or health and safety issues.Your products have improved our plant environment, but also saved money on tooling, coolant dumping and downtime associated with microbiological growth. Unlike the biocides we have used, your products are safe and easily handled. Even our hourly workforce can add the material without risk of injury or sensitization.
After the initial shop trial testing, Microbator PC-78 was implemented plant-wide and has been used throughout our facility ever since.

Your products and company have been a great asset to our plant and its workforce and your personnel have always been available to help and answer any questions that arise. We continue to look forward to our partnership for the coming years.
Sincerely,

D.M.
Chrysler Detroit Axle Plant

Ford

INTER-OFFICE
TO: Research Staff

This product meets all the criteria listed above for a good metalworking biocide. The objective of this study, however, was to determine whether this material would control bacterial metalworking fluid contamination at the Dearborn Engine Plant.

In these studies Microbator PC-78 reduced the 24 hour total bacterial count to well below ten million and total coliform count well below 10,000. This was true in the laboratory tests as well as in the plant tests using metalworking fluids from system 61, 81, & 85.

GM POWERTRAIN

I wish to express my satisfaction with the performance of Punati's deodorizing chemical, Microbator PC-78. This chemical was initially evaluated at our factory last summer in the coolant tank of a kinsbury machine used to ream aluminum bushings.

At that time, the Kingsbury machine was emitting objectionable sulphur-type odors, even after treatment every other day with biocide. After the first addition of PC-78 to this machine, all sulphur odors in the area were noticable absent. PC-78 was later successfully employed to remove odors from coolant and washer systems throughout the plant.

Another advantage of PC-78 is its low toxicity, particularly compared to the biocides which it has replaced. This is a major concern at our factory, since workers may be exposed to coolant additives through inhalation of coolant mist. The relatively safe nature of PC-78 also permits it to be handled by workers without special equipment or training.

I am convinced that Microbator PC-78 has improved working conditions at our plant.
Sincerely,

M.C.
Powertrain Division

GMC

Microbator PC-78 is set up in 5 gallon pails, this is a derancidizing formulation that works to clean, sanitize, and to deodorize. This is basically used for sumps, water systems and large odor areas. The part number in ordering is 3C50278.

Aromabator is set up in 1 quart bottles (spray). This is to destroy fungi and bacteria that produces odors; this is used daily in restrooms to sanitize. This is set up under part number 5Z10400.

A.B.
Truck Maintenance

aromabator® PC-80

The industrial-strength spray deodorant that's safe in every way.

Aromabator PC-80 is primarily designed for concentrated spray or aerosol application, although it may also be used in mopping or wiping solutions. As an airborne true deodorant, it stops bad odors cold and, at the same time, is completely nontoxic, nonhazardous, nonallergenic and noncorrosive.

How it works

Bacteria and fungi can produce truly eye-rolling odors from toxic amines, hydrogen sulfide, proteolytic degradation products, rancid lipids and many other substances. But Aromabator PC-80 has a special oxydizing agent that neutralized malodor in the atmosphere as well as in liquids, semisolids and solid substrates. Aromabator PC-80's true deodorant properties are cumulative and produce a continuing residual effect on surfaces and in solutions of application. Reapplications of Aromabator PC-80 let you maintain malodor control day in and day out.

It works in a variety of environments

Aromabator PC-80 does the job wherever oils, rubber, plastics, soaps, detergents, pulp and paper, iron and steel, waste degradation and tanned products are manufactured or in use.

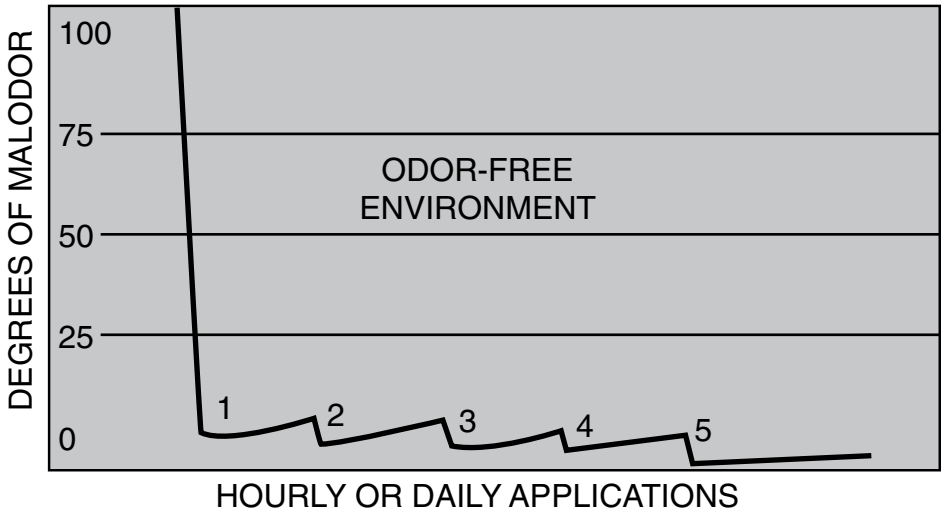
It is effective against foundry malodors from core processes, core washes and stack emissions, on boats, in bilges, heads, galleys, lavatories, outhouses, sumps and sludge areas. Aromabator PC-80 may be safely sprayed onto fabric and nonfabric surfaces, on manufacturing equipment, in crawl spaces, ducts, filters, on carpeting, painted surfaces, tile and the like, without discoloring or harming the surface in any way.Aromabator PC-80 leaves no residue and has no free chlorine release.

Packaging

Available in cartons of 12 quarts. Has a shelf life in the original containers of at least one year.

CAUTION

Concentrated Aromabator PC-80 may be mildly irritating if taken internally or if placed in direct contact with the eye. Keep away from children. Ph 8-8.5.



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