

Brooklyn Board of Education
Regular Meeting
Agenda
January 27, 2021

When: January 27, 2021 at 07:00 PM Eastern Time (US and Canada)

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Mission: The Brooklyn Schools will foster a drive for learning within each student to reach his/her greatest potential. To achieve this mission, the school will continually improve its educational programs and services to meet this community's expectations for a quality education for all.

Due to the COVID-19 Pandemic, the Brooklyn Board of Education will conduct a virtual meeting in accordance with Governor Lamont's Executive Order 7B.

To support public participation the documents will be posted on the
[Town of Brooklyn Website](#) as well as the [Brooklyn Public Schools Website](#).

You are encouraged to send questions or comments to buell@brooklynschools.org prior to the meeting.

1. Attendance, Establishment of a Quorum, Call to Order
2. Public Comment
3. Approval of Minutes
 - a. December 16, 2020
4. Correspondence and Communication
 - a. Presentation on TiO₂ Coating by Todd Hodrinsky
 - b. Thank you letter- Lebanon Lions Club
 - c. Thank you letter - Beagary Charitable Trust
 - d. Thank you letter - Brooklyn Xtra Mart
5. Administrative Reports
 - a. Brooklyn BOE Expenditure Report
 - b. Enrollment Report
 - c. Brooklyn's Best
6. Board of Education Committee Reports

7. Board Representatives to other Committees
8. Old Business
 - a. DRAFT #4 2021-2022 Calendar
9. New Business
 - a. Update Brooklyn Education Model
 - b. 2021-2022 Budget Planning Review
 - c. Hiring of IT Support Personnel
10. Public Comment
11. Executive Session
 - a. Superintendent's goals for the 2021-2022 school year
12. Adjournment

The Board of Education

Town of Brooklyn
119 Gorman Road
Brooklyn, CT 06234

Mae Lyons, Board Chair
Keith Atchinson, Secretary
Tana Jolley

Melissa Perkins-Banas, Vice-Chair
Justin Phaiah
Carolyn Hackbarth

Mission: The Brooklyn Schools will foster a drive for learning within each student to reach his/her greatest potential. To achieve this mission, the school will continually improve its educational programs and services to meet this community's expectations for a quality education for all.

The Brooklyn Board of Education held their monthly meeting virtually on December 16, 2020 via Zoom. In attendance were Mrs. Lyons, Dr. Perkins-Banas, Mr. Phaiah, and Mrs. Jolley. Mrs. Buell, Superintendent, was also present. Keith Atchinson and Carolyn Hackbarth were absent from the meeting.

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Schools Website.

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1. Attendance, Establishment of a Quorum, Call to Order

Quorum established. Mrs. Lyons called the meeting to order at 7:11 pm.

Mrs Lyons stated they would like to add an agenda item 10a. Executive Session:
Attorney Client Privileged Information Regarding Board of Education Designation of
Designated High Schools.

Motion to approve to add item 10a. to the agenda.
(Perkins-Banas/Phaiah)
No Discussion, unanimous vote to approve

Mrs. Lyons stated they would like to add an agenda item 9d. Review of Temperature
Controls for Brooklyn Elementary School.
Motion to approve to add item 9d. to the agenda.
(Perkins-Banas/Phaiah)
No discussion, unanimous vote to approve

Mrs. Lyons stated they just received notification that there was a Woodstock Academy student from Pomfret that passed away today. She stated they would like to have a moment of silence for the student. Mrs. Lyons stated that the Board sends their condolences to the family of this student.

2. Public Comment

Amy Landis asked why she can not see all of the Board of Education members that are participating in the meeting? She stated that she can only see Mrs. Perkins-Banas and Mrs. Lyons.

Mrs. Perkins-Banas stated that they may be participating by phone or have their video off. Both Mrs. Jolley and Mr. Phaiah stated they were participating using their phones.

3. Approval of Minutes

a. November 24, 2020 BOE Meeting Minutes

Motion to approve the Regular Meeting Minutes of November 24, 2020
(Phaiah/Perkins-Banas)
No Discussion, unanimous vote to approve

4. Correspondence and Communication

a. Thank you letter - Mr. & Mrs. Goodwin

Mrs. Buell stated that she sent a thank you letter to Mr. and Mrs. Goodwin for their generous monetary donation towards the fees for an online program called Generation Genius. Their donation is a great assistance to Mrs. Jung's 4th grade distance learning class.

b. Thank you letter - Ms. O'Connor

Mrs. Buell stated she sent a thank you letter to Ms. O'Connor for her generous donation of \$1,000 in honor of her husband's memory to offset the negative lunch balances. Mrs. Buell stated that Ms. O'Connor has generously donated multiple years in a row to the Brooklyn Public Schools and appreciates her financial support and interest in our schools.

5. Administrative Reports

a. Brooklyn BOE Expenditure Report

Mrs. Buell discussed the expenditure report. The year to date expenditure report shows that we are projected to spend on track to what has been budgeted. There

have been some additional expenses this year, as well as some cost savings. Mrs. Buell stated she has received some grant funds to help offset some of the costs.

b. Enrollment Report

Mrs. Buell discussed the enrollment report. The enrollment has not changed much from November. Mrs. Buell stated that enrollment is up by 3 students and 2 students left the district to be homeschooled. She stated that we have a total of 49 students being homeschooled, which is a reflection of some of the challenges and concerns around the covid-19 virus. Mrs. Buell stated that in the spring, they will be conducting portfolio reviews for all the homeschooled students. It will be a new practice, but something that the Brooklyn Public Schools should be doing. She stated that the families have registered as homeschooled students and know who they need to follow-up with.

c. Brooklyn's Best

BES

1. IIC students have had a very successful transition to their new teacher, Ms. Corbin with the support of Karen Hyatt.
2. Students and staff have successfully transitioned to Distance Learning.
3. We have received communication that we were approved for the AQIS grant to support us through the NAEYC accreditation process.
4. 27 staff members will be participating in Paint Night to support the Brighter Christmas Fund.

BMS

1. Good Cookie Awards:
Grade 5: Calianne Worth, Elijah McKenna, and Abigail Langevin
Grade 6: Tomas Gutierrez, and Kendal Ternowchek
Grade 7: Owen Lamontagne, and Kloe Pike
Grade 8: Ricky Bradley, and Lydia Orlowki
2. We started a Good Cookie Award for staff as well! Staff nominate colleagues based on their contribution to the positive school climate at BMS. We select randomly from the submitted forms and provide all feedback to the staff members for them to hear that people recognize their efforts on behalf of the BMS community. The November recipient is Matthew Kiefer. "Matt provides continuous support to all of his students while creating dynamic lessons both live in person and through video. His skills build rapport with students and we are lucky to have him on the grade 7 team."
3. The attendance rate during distance learning has been over 90% every day and in most cases over 95%! We continue to work hard to engage students while in distance learning.

6. Board of Education Committee Reports

Mrs. Perkins-Banas stated that the Brooklyn Parks and Recreation met on Monday, December 14, 2020. The Toy drive and the Coat Drive were very successful this year. There were 750 coats that were given to children in need and they also received thousands of dollars for the Toy Drive. Mrs. Perkins-Banas stated that it is amazing how generous the Northeast part of Connecticut is. She also stated that the Spring/Summer brochure will be coming out soon and hopefully they will be able to offer summer camp again with the vaccines for covid-19 starting to come out.

Mrs. Lyons stated that the Solar Committee met last week to approve bills and it looks like the elementary school is just about finished and the middle school is approximately a month out.

7. Board Representatives to other Committees

Nothing to report

8. Old Business

a. PV Update

Elementary School:

This project has achieved substantial completion, and the witness test has been performed. The Certificate of Compliance has been provided to Eversource. We are awaiting delivery of the Permission to Operate (PTO) document from Eversource, at which point the system can be energized and will be fully operational. Once the (PTO) is delivered the ZREC registration process can begin. This takes about 6 weeks as it involves three different agencies to complete the process, but this system will be operational during this time.

Outstanding Items:

The educational monitor has not yet been mounted in the school's lobby. The contractor will coordinate with the Town to identify the preferred mounting location. The ZREC meter has not been delivered yet by Eversource, but this will not hold up energizing the system.

Project Delays:

The delay in energizing this project was a result of a longer than expected lead time on the rapid-shutdown-devices. There was a nearly 6 week window when the contractor was waiting for delivery of this product to complete the installation.

Middle School:

This project has not yet achieved substantial completion. All electrical equipment has been installed from the rooftop down to the main electric room. The rapid shutdown devices are installed. The racking (panel mounting structure) is

assembled, and attachments to the roof are being installed this week by the roofer. Once the attachments are complete, the modules can be secured. This is the last major milestone.

Outstanding Items:

Waiting on completion of the roofing attachments, mounting of the solar panels, and installation of the educational monitor. The ZREC meter has not yet been delivered by Eversource. Performance of the witness test and submitting the Certificate of Compliance have not been completed. The contractor anticipates completing these tasks by the end of January.

Project Delays:

The roof warranty is held by the roofing manufacturer Garland. In order to insure the roof warranty remains in full effect after the installation of the solar project all attachments must be installed by a Garland certified roofer. Coordination with such a roofer has proven difficult from a scheduling standpoint. In addition, specialized rivets for the attachments had a longer than expected lead time.

- b. Policy Updates - second read
 - i. Policy # 3541.5
 - ii. Policy # 3542.22
 - iii. Policy # 4211
 - iv. Policy # 4111.1/4211.1

Mrs. Buell stated that this is a second read on these policies. She stated if the Board has any discussions, they can discuss them or any changes they would like to make, they can recommend the changes. The Board had no further discussions or changes they wanted to make.

Motion to approve Policy #3541.5, Policy #3542.22, Policy #4211, and Policy #4111.1/4211.1.

(Perkins-Banas/Phaiah)

No discussion, unanimous vote to approve

- c. Update: 2021-2022 Brooklyn School's Calendar

Mrs. Buell stated that she did survey staff and community on the 2021-2022 Brooklyn School's calendar for their input. She shared the draft #3 calendar with the Board that shows the staff and community input. The draft #3 calendar shows the most popular choices of the survey. Mrs. Buell stated that the first day of school most chose to start was on September 1, 2021 instead of starting the week before, which would align with Woodstock Academy and Killingly High School calendars. Mrs. Buell stated that we have been accustomed to starting the last week in August, but if we were to start a week earlier it would shorten the summer vacation for families. The benefit of being in line with the high schools

is the cost for bus transportation. Mrs. Buell stated that it will be a decision the Board will need to decide on how to start the calendar year. Another change on the draft #3 calendar is Veteran's Day. In the survey, more were requesting not have school on Veteran's Day. Mrs. Buell stated that it has been about 5 years since Brooklyn has been in school on Veteran's Day and there have been Veteran ceremonies in the schools and other activities. Woodstock Academy is in school on Veteran's Day, Killingly High School is not in school. Mrs. Buell stated that the last day of school changes based on when we start school and if we are in school on Veteran's Day. We are in school for 182 days.

Mrs. Perkins-Banas stated she likes the idea of being in school on Veteran's Day. It gives the students the opportunity to learn from the Veteran's and is a valuable experience.

Mrs. Lyons stated she has always heard good things about the programs and students getting more out of being in school than out of school.

Mrs. Perkins-Banas stated she isn't sure about starting a week earlier in August, it takes away from the summer.

Mrs. Lyons asked about February 22, 2021 where it used to be vacation week. There was discussion about the professional development day for February 22, 2021.

The Board would like Mrs. Buell to prepare a draft #4 for the Board to approve at the next meeting.

9. New Business

a. Update Brooklyn Education Model

Mrs. Buell stated that we are currently in a distance learning model. She stated there were numerous discussions on the half day hybrid model where students would be coming in everyday. It was more of a hardship than a benefit for families. The distance learning model is working much better than in the spring. The longer the distance learning goes, the harder it is for some students to stay connected. Mrs. Buell stated she is hoping to be back to full in person as soon as we can. She stated they are planning a new hybrid model where Monday will be a remote learning day and then ABAB strictly for core academics. The remote days will have check-ins with related arts teachers and have more independent work. She stated that it seems parents are more comfortable with this hybrid plan than the half day hybrid plan. Mrs. Buell stated she will continue to monitor the covid numbers. There are some concerns around the holidays and people being exposed and contracting the virus on top of the peak that is expected to be coming.

Mrs. Lyons asked if there has been a date set for when we will start back in school. Mrs. Buell stated that we are planning to return to the hybrid model. She stated that there have been several conversations around the state about schools being in remote distance learning for a period of time after the holidays. Some feel it should be. There has been strong research and numbers that state that even if the community spread is high, it does not always mean it will impact the schools. Mrs. Buell stated that the flow chart shows that when you are in the red in the community, you should reduce the density. Reducing the density is the hybrid model. She stated if the community spread is high, we should be able to return in the hybrid model. Mrs. Buell stated the biggest challenge is the administration piece where there are not enough teachers due to so many quarantining. Mrs. Buell stated that after Thanksgiving if we were not in the remote distance learning model, she would have needed to close the schools due to not having enough staff.

- b. Request for reimbursement for high school tuition for Marianapolis Preparatory School

Mrs. Buell stated she has received a request from a parent to pay for a private school tuition for Marianapolis Preparatory School. It is the same request that Mrs. Buell shared with the Board previously. She stated that at the last meeting, November 24, 2020 the Board made a motion for the BOE Policy #3340 which is as follows:

BOE Motion: The Brooklyn Board of Education would like to continue to designate Killingly High School and Woodstock Academy as designated high schools. Any parent wishing to send their child to a non-designated public high school must submit a written request to the Superintendent. We authorize the Superintendent to approve placement in another accredited public high school if it meets the needs of the student and does not exceed the cost of a designated high school contingent upon parents agreeing to provide transportation at no cost to the district.

Mrs. Lyons asked if there was any new information for the Board to consider at this time. Mrs. Buell stated that she does have communication that she would like to review with the Board, which is the reason to add the agenda item to go into executive session. Mrs. Buell stated that they will review the letter during the executive session from the Board Attorney.

Motion to suspend action on this matter until the Board has a chance to review all the information that is available to them.

(Perkins-Banas/Phaiah)

No discussion, unanimous vote to approve

- c. 2020-2021 Enrollment Projection Report from NESDEC

Mrs Buell reviewed the 2020-2021 Enrollment Projection Report from NESDEC. She stated that NESDEC provides this report annually. She reviewed a few of the highlights for the Board: Pre-k through 4th grade numbers have gone down over the past few years; Kindergarten through 8th grade there is a decline of 38 with 49 students being homeschooled; 9th grade through 12th grade also has a decline of 20 students. For the Projection Report, NESDEC looks at the birth rates to project student enrollment. Mrs. Buell stated that in 2020, the enrollment for kindergarten through 12th grade is 1,278 students and they are projecting 1,345 students for 2025.

d. Review of Temperature Controls at BES

Mrs. Buell stated that we had an upgrade to the environmental controls, which are the heating controls for our schools. The upgrade was needed to be able to set the controls of the temperatures in different rooms and be able to monitor if something went wrong. Our Director of Facilities can monitor the heat in all the rooms remotely so if something should happen he will know. Mrs. Buell stated that there was never an update to the preschool/kindergarten wing. She stated that they can no longer access that system to control it and some rooms are much warmer than others. Mrs. Buell stated that they would like to put it on the same environmental control system. She stated that Mr. Graef requested bids from five different companies that are contracted with the state to do work on this particular system. One of the quotes is from the company that originally installed the system and the other company is a new company. Mrs. Buell stated that they recommend using Sarracco, which is the lowest bid and also the original company that installed the system. She stated the funding will come from equipment repairs and building repairs line items.

10. Public Comment

Amy Landis stated she noticed that the new business item added is going into executive session regarding Marianapolis tuition. She stated that she is curious to what they will be discussing since she has two high school students who attend Marianapolis, which is a \$28,000 savings to the Brooklyn Schools. She believes there are five other students that attend Marianapolis as well. She understands that the executive session is not in public, but if they are making decisions about Marianapolis she's wondering if other individuals who are attending Marianapolis will be privy to the potential decision and why they are not making a choice in regards to these issues.

Mrs. Lyons stated she believes the Board will be making a decision, but they have information that is attorney client privileged information that they need to discuss.

Mrs. Landis stated if they are willing to pay for one tuition to Marianapolis, she's wondering how that affects everyone else that may potentially send their child to a private school and pays their own tuition. She stated that they pay tuition to NFA, Parish

Hill, Killingly, and to Woodstock Academy, which Marianapolis isn't that far from the Academy. Mrs. Landis said she is just making it known.

Brian Russo stated he is a parent to a student at Marianapolis. He furnished an attorney letter to Mrs. Buell and asked her to forward it to the Board. He asked if she was able to give that letter to each member of the Board for review tonight. Mrs. Buell stated that the Board did receive the letter. Mr. Russo thought that it would be considered additional or new information. He stated that Mrs. Lyons asked earlier if there was new information. He believes the attorney laid out their case and there are other parents in the meeting as well. His concerns were that they have all the facts and information. He stated he is not familiar with executive sessions. He asked if it means they meet behind closed doors on this issue and come to a vote or would that be in a public meeting.

Ms. Buell stated that executive session allows the Board to go behind closed doors and have a discussion about attorney client privileged information. She stated this is what the Board is choosing to do. They made a motion to do that. Any decision they would make would be outside where they would end the executive session, come out of the executive session and if they choose to take action they would do that is a public session.

Mr. Russo asked if this would take place this evening or in another meeting.

Mrs. Buell stated it appears that they will take some form of action tonight. She stated they will come out of the executive session and the Board will make a decision or a vote.

- a. Executive Session: Attorney Client Privileged Information regarding Board of Education designation of Designated High School

Motion to go into executive session to discuss attorney client privileged information regarding Board of Education designation of designated high school at 8:06 p.m. and to invite Superintendent Buell to attend.

(Perkins-Banas/Phaiah)

No discussion, unanimous vote to approve

Motion to come out of executive session and enter into the Board of Education meeting.

(Perkins-Banas/Jolley)

No discussion, unanimous vote to approve

Mrs. Lyons stated that they are officially out of executive session and back into the Board of Education meeting at 8:33 p.m. She stated that they are ready to make a motion or a vote.

Motion that the Board of Education will not take a vote to approve the payment of tuition to a private school and that the Board of Education will request legal guidance from the Board attorney before acting on this request.

(Perkins-Banas/Phaiah)

No discussion, unanimous vote to approve

11. Adjournment

Motion to adjourn at 8:34 p.m.

(Jolley/Perkins-Banas)

No Discussion, unanimous vote to approve

Respectfully Submitted,

Donna L. DiBenedetto

Donna L. DiBenedetto

Board Clerk

The Fastest Acting, Longest Lasting Surface Coatings for the COVID-19 World and Beyond



**Disinfect, Clean, Deodorize.
Quickly.
Permanently.**



Key Features

- **One time coating of any surface – Remains as long as the substrate exists**
- **Fast acting – Most organisms are killed on contact**
- **Clear and invisible**
- **100% Safe for Humans**
- **UV-A or Sunlight Activated to decompose and destroy organics**



The TiCoat® Product Suite

TiCoat® has developed the following U.S. market-focused products, internally and with Japan:

- **Glass Coating A**
- **Glass Coating B**
- **7H UV-A Light Coating**
- **4.5H Visible Light Coating**
- **Binder A**
- **Binder B**

The “H” designation is an indicator of hardness of the product when dried after application. At 7H and 4.5H, our coatings are extremely durable.





The TiCoat® Product Attributes

TiCoat® products are optimized to support:

- ✓ Surface
- ✓ HVAC
- ✓ Water



- ✓ Indoor
- ✓ Outdoor

How it Works

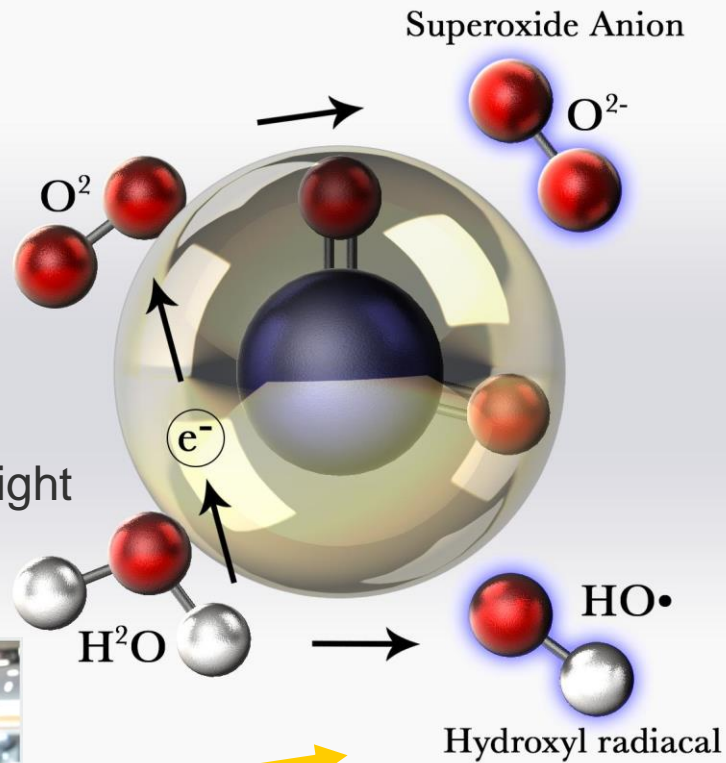
Sunlight



UV-A LED Light



Treated Nano TiO₂ Surface



Photocatalytic Reaction

Treated surface is exposed to direct sunlight, Visible Light OR a UV-A LED light source.

A photocatalytic reaction creates O_2^- and $OH\cdot$ which oxidizes and destroys all organic organisms that are treated with TiO₂.

This decomposes microscopic organisms and organic particles instantly. Final result; harmless neutral gases released into atmosphere.



Complete Micro Organism Destruction



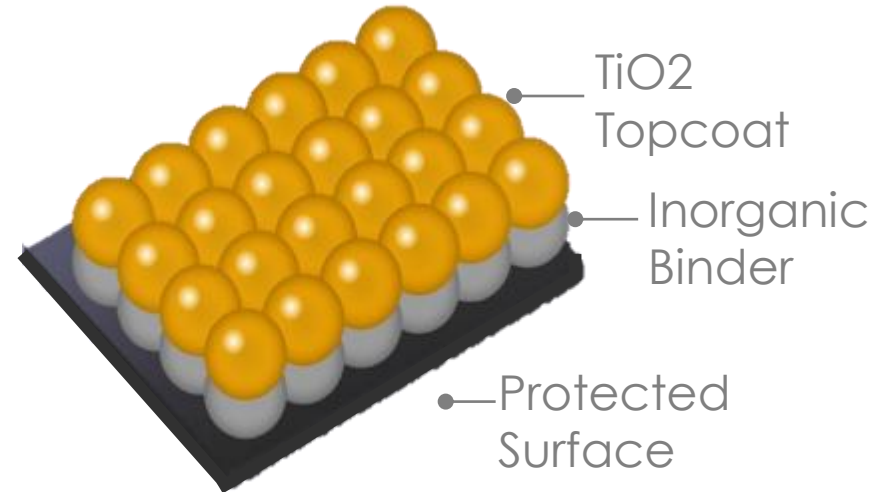
Technology Background

Developed in Japan

Titanium Dioxide has long been known to have photocatalytic decomposition effects on organic particles

The challenge has been to effectively bind the material to any surface.

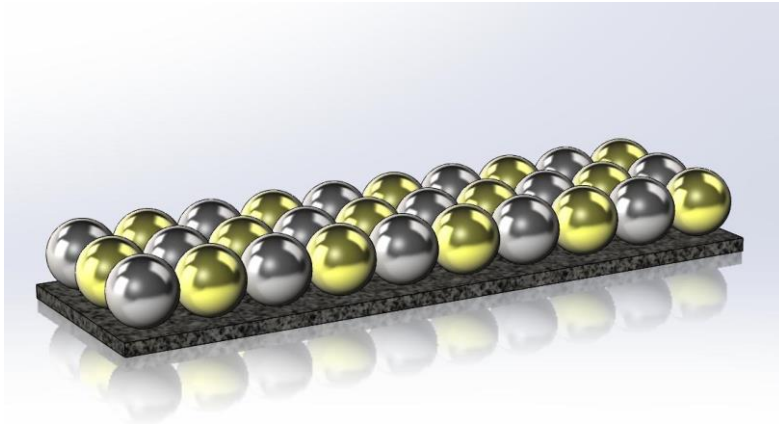
- Organic binders are decomposed by the TiO₂ — the coating comes off the substrate over time
- TiCoat has developed a non-organic binder that bonds the TiO₂ to the substrate surfaces — creates a durable and permanent coating



- World's first pure TiO₂ coating that uses a 100% non-organic binder and 100% TiO₂ as a topcoat
- Eliminates the need for reapplication needed with organic binders
 - More powerful than TiO₂ products with intermixed metals (e.g., copper, silver)

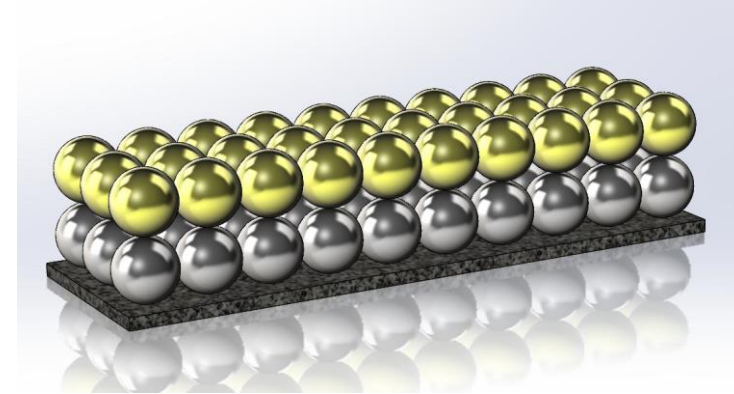
Theirs Vs Ours

TiO₂ with Organic Binder



- TiO₂ is mixed with binder, or sprayed onto an organic binder. The TiO₂ decomposes the organic binder particles, therefore removing the TiO₂ coating from the base.
- The coating solution can be strong acidic, influencing environment, human body, materials, etc.

TiO₂ System with Non-Organic Binder



- Organic components are decomposed with only O₂, H₂O and sunlight on a 100% coated TiO₂ base.
- Complete inorganic binder (peroxide titanium) completely blocks the photocatalyst effect towards the organic binder material.
- Neutral pH of coating solution: No negative influence to environment, human body, materials, etc.



How It's Applied

The coating is applied in two steps using a standard automotive spray gun or atomizing spray gun:

Step 1: A Non-Organic binder material is sprayed onto the surface and allowed to dry. Typically requires 2-4 thin coats.

Step 2: A top TiO₂ coating is applied to the binder material. Typically requires 2-4 thin coats.

Results: Once dried, the TiO₂ coating is permanently attached to the surface.

Titanium Dioxide is quite safe to apply, and minimal face mask protection is required



Why It's Unique

- World's first TiO₂ coating that uses a non-organic binder.

ONE TIME PERMANENT APPLICATION

- Extremely fast acting

DESTROYS Organisms WITHIN SECONDS

- Safe for Humans and Animals

NO HARMFUL CHEMICALS

- Two-part system binds to ANY surface and creates an optically clear coating invisible to the human eye

OPTICALLY INVISIBLE ON ANY SURFACE

- Water+UV-A+TiO₂ = Complete destruction of viruses (including SARS-CoV-2 (COVID-19)), bacteria and fungi on the surface

NATURAL ELEMENTS ACTIVATE THE PHOTOCATALYST REACTION



TiCoat Exceeds Current Competitor Strengths

Solution must A) Act Fast AND B) Last a Long Time

Three Competitive Segments:

1. Instant, Short Term (0-30 days) Surface Cleaning Sprays (e.g. Lysol, Clorox)

- ✗ Don't last long – seldom applied properly
- ✗ Require reapplication = massive labor and consumables expense
- ✗ Decline in efficacy over their duration of effectiveness

2. Semi-Permanent (30 days-10 years) Surface Treatments (e.g. Microban, Agion)

- ✗ Don't destroy pathogens fast enough
- ✗ Require reapplication
- ✗ Decline in efficacy over their short lifetime

3. Permanent Surface Treatments (10 years+)

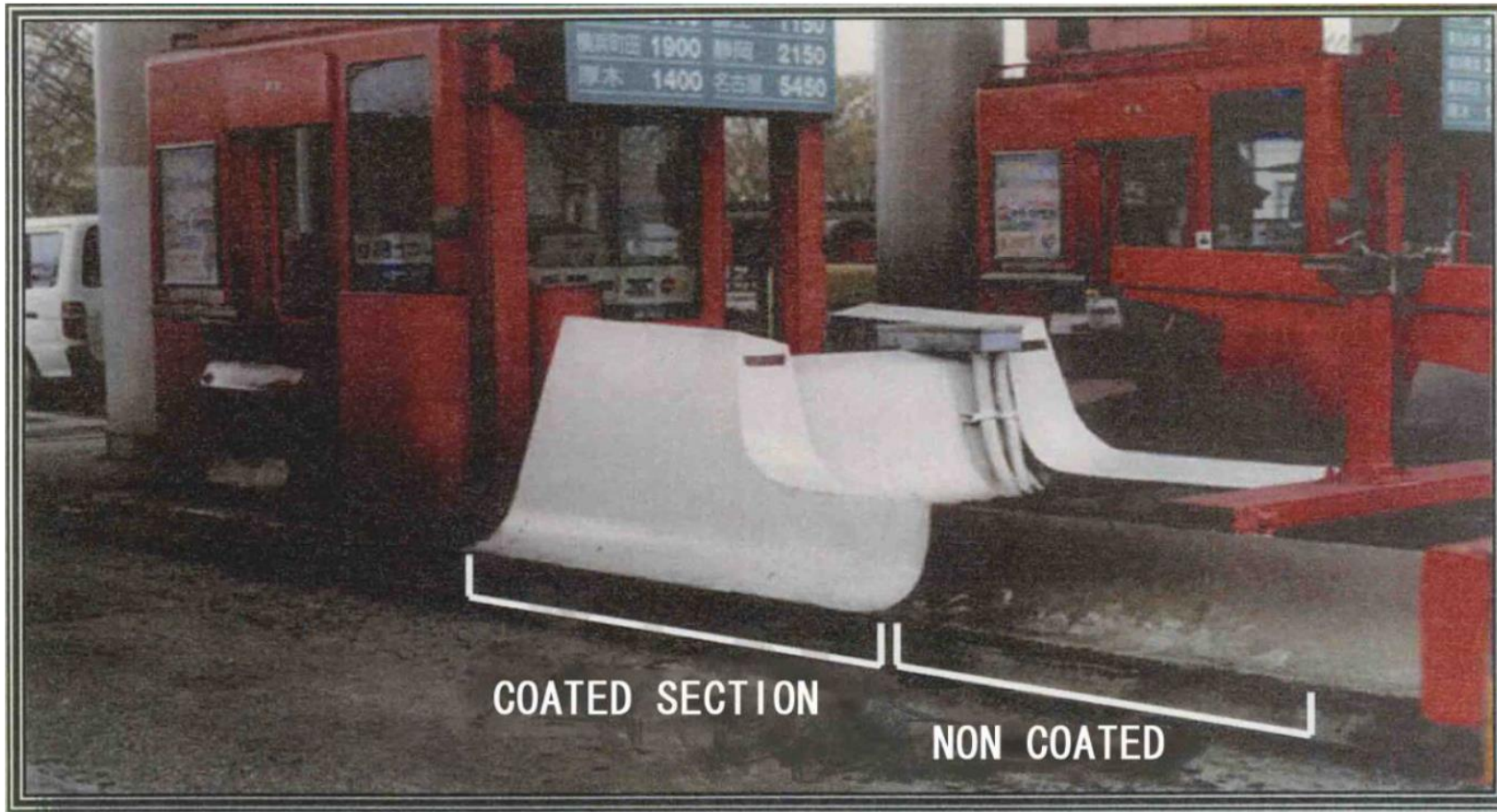
- ✓ One-time application
- ✓ Continuous efficacy over time
- ✓ Near instant destruction of pathogens
- ✓ Long lasting ROI

COMPARING TICOAT TO OTHER SURFACE CLEANING TECHNOLOGIES

Technology	Toxic to People	Efficacy vs Virus	Speed	Active Life	Application Frequency
Lysol	Yes	99.99%	Minutes	Minutes	Constant
Bleach	Yes	99.99%	Minutes	Minutes	Constant
Nano Copper	No	90%	Minutes	Days	Every Few Days
Alcohol	Yes	99.99%	Minutes	Minutes	Constant
Ammonia Coating	Yes	99.99%	Minutes	Weeks	Weeks
Nano Silver	No	99.9%	Hours	Years	Every 5-10 Years
TICOAT	No	99.99%	Seconds	Years	Not Required

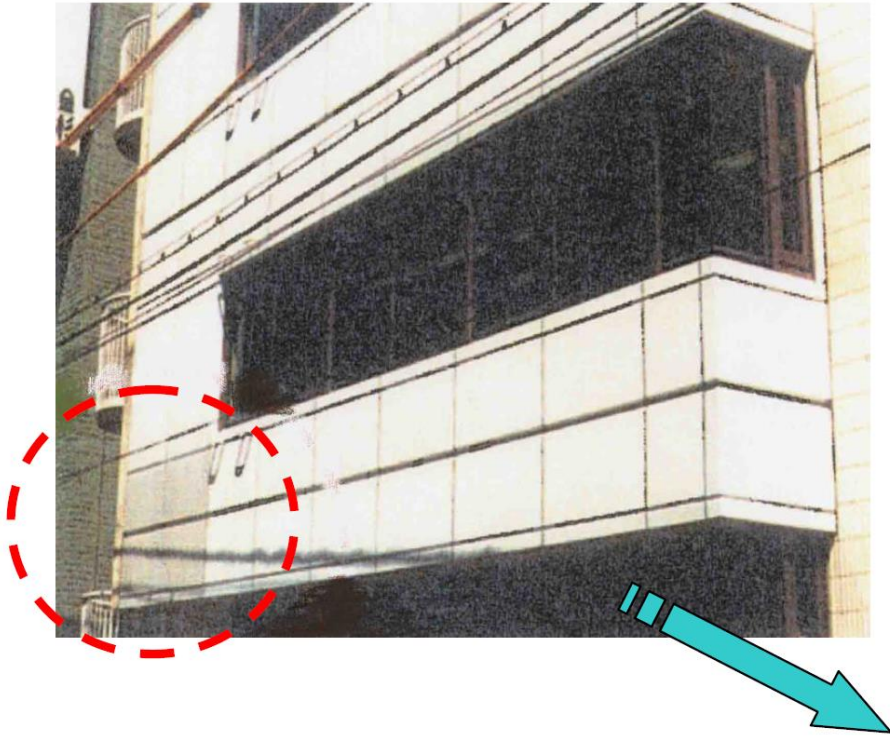
Application Examples

Highway Tollbooth (72 days after coating)



Application Examples

Coated Building

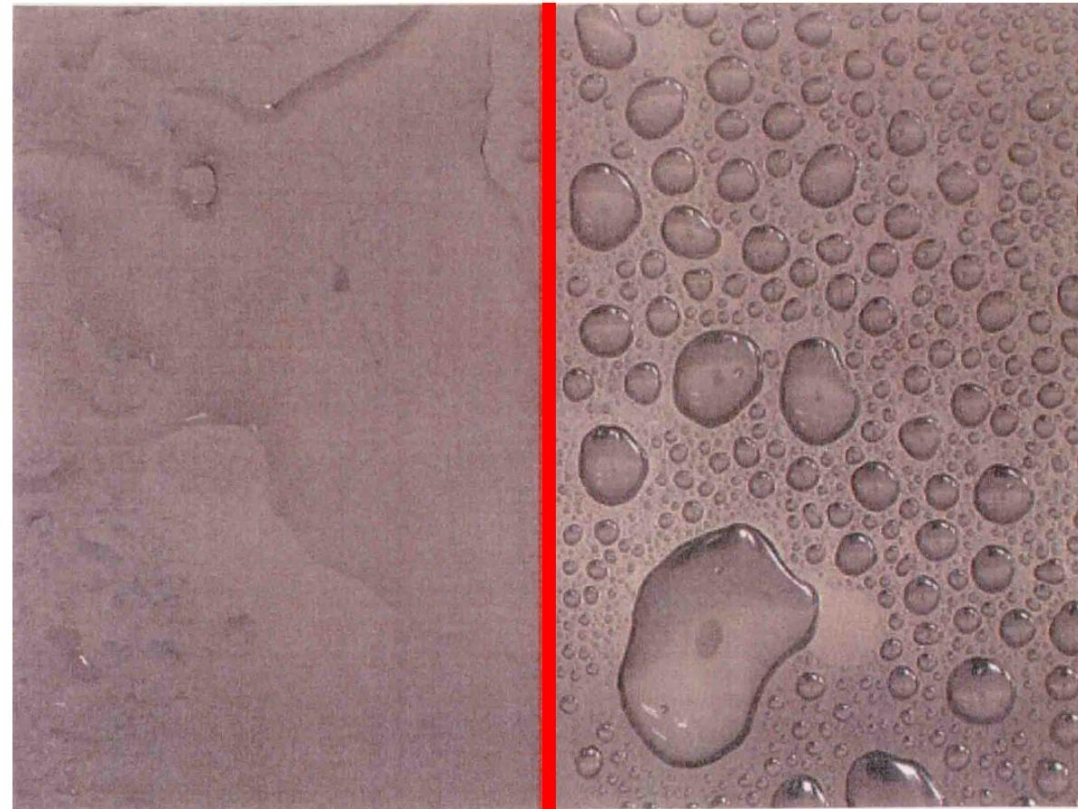


Non-Coated Section
(6 years later)



Application Examples

Titanium prevents fogging and dirt from sticking to the surface by reducing its contact surface area



Coated Surface



Non Coated Surface

THANK YOU

Contact: Todd Hodrinsky
thodrinsky@ticoat.com
+1-860-634-1790
www.ticoat.com

CONFIDENTIAL

TiCoat® FAQ's

FAQ

How can you claim your TiO₂ coating is permanent? As it generates hydroxyl radicals and superoxide's, it is clear that it oxidizes all bacteria, microorganisms and any organic particles. But it should subsequently also get reduces as well. Why would it not deplete itself and lose its cleaning power over time?

The anatase TiO₂ Molecules never change. They only function as a photocatalyst. When illuminated by light a large valent band gap activates, which rips the H atom away from each H₂O molecule on one side (creating a powerful hydroxyl radical) and moves that charge to an O₂ molecule (creating a super oxide anion).

This process never reduces the TiO₂ itself and it stays intact. The catalytic process takes place at the outer region of the TiO₂ molecules and the bond between Ti and 2 O atoms is extremely strong.

This is backed by the high chemical resistance of titanium objects, where the outer oxide layer resists molecular breakdown by aggressive acids etc.

The power of our coating is that we have unique binder that also cannot be broken down and flake off the surface under this atomic process. In Japan there are construction projects where the coating is verified and still functioning like the day 1 after 18 years of exterior use.

Does TiO₂ comply with established EPA VOC regulations? If so, is there documentation of the VOC level?

There is currently no EPA testing as this product has never been offered in the United States. It is considered a disinfecting product and does not requite EPA Certifications as a surface cleaner. We have test report from Japan using lab rabbits with no ill effects. We also have a EPA food additive study that shows Titanium Dioxide is safe for us.

How is Japan using the TiO₂ coating in hospitals, schools, office buildings and transportation centers as it relates to COVID-19?

Japan has been successfully using the coatings on applications in Hospitals, Schools, exteriors of buildings, bathrooms and much more. We have a test report showing it was effective and destroyed a SARS Virus in Japan.

If you know that it has disinfecting, viral killing, destroys microorganism's, odor killing bacteria and exterior of building constant cleaning. Why are you not claiming some of these things in the USA?

We have studies to support these claims in Japan. However, we are currently submitting for these claims to be approved by the EPA and FDA now. The only thing we can state today is that the coating is a surface cleaner. We are happy to provide the supporting documentation on request for clients looking to use the coating in the USA. COVID-19 has slowed the approval's process to a crawl, and we feel its in the best interest of our company to make the product available now.

Any tests showing it is effective against SARS-COVID 19?

We have test data from Japan that shows it was effective on a SARS virus. We currently do not have data on SARS-COVID 19. It kills all micro-organisms. As a self-disinfecting technology it will continue to work on any virus, bacteria or other organic matter. We have test data on H1N1 that was conducted in Japan available upon request.

Does TiCoat have a shelf life?

As long as our coatings are kept in a constant temperature environment and not exposed to any light sources, they can last for years prior to using them. We have samples in Japan that have been sitting for up to 8 years without any signs of degrading.

Does TiCoat require any mixing of other compounds?

Yes, that is the special aspect of this surface coating. Unlike other Titanium Dioxide coatings in the market that wear off quickly, our unique inorganic binders last for decades on any surface.

Does TiCoat require any hazardous material handling procedures?

NO SPECIAL HANDLING REQUIRED

If this product has been in existence in Japan for several years, why has the Japanese manufacturer limited the product to Japan and not marketed and distributed the product internationally until this time?

Our parent company is very busy providing the coating in Japan. They lack the ability to bring it to the global market and have focused on Japan only. They have partnered with us to bring the technology to the global market including the USA.

How does it work?

The coating works on a non-discriminating molecular level. The smaller the organics, the faster they are completely decomposed to neutral gases. The common element required to activate the coating is UV-A or basic light. We have developed a non-organic binder that lasts forever and keeps the coatings topcoat on the surface permanently. This coating does not work on a biological level. Not even on a chemical level. It works at the molecular and atomic level.

The photocatalytic decomposing property/power of TiO₂ is known since the 1980's. We have test data from Japan on its effective use on bacteria and SARS. This report is available upon request. Please note that this has not been approved or validated in the United States EPA regulations.

How do we maintain it?

In general, the surface coating cleans itself. The larger the organic matter the longer it takes to remove it from a surface. Small organic are quickly removed on the surface without any help from us. Larger organics can be removed with normal cleaning procedures to speed up the process. So, for example, a large bird dropping on a surface will be quickly washed away using rainwater on an exterior of a building or by washing the surface with normal tap water. Interior spaces can be cleaned using standard tap water rinse procedures and eliminate the use of harsh chemicals.

Want to know more? Check out the FAQ on our website for more current information.



Todd Hodrinsky
VP Marketing and Product Development

Email: thodrinsky@ticoat.com

Phone: 860-634-1790

www.ticoat.com for more information ■ ■ ■

MATERIAL SAFETY DATA SHEET
TIOSKYCOAT^A

Revised on January 19,2016

1. Protocol and Company Information

Product Name: TiCoat-A

Recommended Use: Photocatalyst

Manufacturer: Tio Systems.Co.Ltd

3-5-15 Nabeshima, Saga-City, Saga Prefecture, Japan Tel

81-952-36-8765 Fax81-952-36-8770

2. Hazards Identification

Non-hazardous Substance

Non-dangerous Goods

3. Composition and Information on Ingredients

Components: Anatase Titanium Dioxide, Amorphous Titanium Peroxide and Water CAS
Number: 13463-67-7

Chemical Formula: TiO_2 , $Ti(O)O_2$ Appearance & Odor: Odorless, Aqueous Solution Specific

Gravity:1.0

pH: 7

4.First Aid

Eye contact: Wash out immediately with water. Get medical attention if irritation persists. Skin

contact: Wash skin with soap and water.

Ingestion: Give a glass of water. Seek medical advice. Inhalation: Remove to fresh air. Get
medical attention for any breathing difficulty.

5. Fir lighting Measures

Fire: Not considered to be a fire hazard.

Explosion: Not considered to be anexplosion hazard.

Fire Extinguishing Media: Use any means suitable for extinguishing surrounding fire

6. Accidental Release Measures

Sweep and discard

7. Handling and Storage

Precautions for safe handling:

Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses. Conditions for safe storage:

Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls/Personal Protection

Occupational Exposure limits: No value assigned.

Personal Protection: Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state: Solution

Color: Whitish yellow

Odor: Odorless

Specific Gravity: 1.0

pH: 7

Flash Point: Non-combustible and non-flammable

10. Stability and Reactivity

Chemical Stability: Stable under ordinary conditions of use and storage. Conditions to Avoid: Don't leave below the freezing point.

Incompatibility: Water reactive metals-potassium, sodium

Hazardous Decomposition Products: None _____

11. Toxicological Information

Skin contact: Non skin irritation (1)

Eye contact: Non eye irritation (2)

Ingestion: No adverse effect expected.

Toxicological data: Oral LD50 (mouse): >20,000mg/kg (3) Mutagen: Negative (4)

12. Ecotoxicological Information

Environmental Toxicity: No information found.
Products of Biodegradation: The materials not biodegradable.

13. Disposal Considerations

Refer to local government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act: Article 57-2 Delivery of Document, etc Sea
Water Protection Law

16. Other Information

- 1) The Test Report of Japan Food Research Laboratories No.503100554-002
- 2) The Test Report of Japan Food Research Laboratories No.503100554-006
- 3) The Test Report of Japan Food Research Laboratories No.50310054-004 Food
- 4) The Test Report of Japan Research Laboratories No.09002238001-01

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use.

MATERIAL SAFETY DATA SHEET
TIOSKYCOAT-C

Revised on January19,2016

1. Product and Company Identification

Product Name: Tioskycoat-C
Recommended Use: Photocatalyst
Manufacturer: Tio Systems.Co.Ltd
3-5-15 Nabeshima, Saga-City, Saga Prefecture, Japan Tel
81-952-36-8765 Fax81-952-36-8770

2. Hazards Identification

Non —hazardous Substance Non—dangerous Goods

3. Composition and Information on Ingredients

Components : Anatase Titanium Dioxide, Amorphous Titanium Peroxide and Water
- CAS Number : 13463-67-7
Chemical Formula : $Ti(O)_2$ Appearance & Odor :
Odorless, Aqueous Solution Specific Gravity : 1.0
pH : 7

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists.
Skin contact : Wash skin with soap and water.
Ingestion : Give a glass of water. Seek medical advice.
Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty.

Fire Fighting Measures

Fire : Not considered to be a fire hazard.

Explosion : Not considered to be an explosion hazard.

Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire

6. Accidental Release Measures Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls ! Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Transparent yellow

Odor : Odorless

Specific Gravity : 1.0

pH : 7

Flash Point : Non—combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals—potassium, sodium Hazardous

Decomposition Products : None

11. Toxicological Information

Skin contact : Non skin irritation (1)

Eye contact : Non eye irritation (2)

Ingestion : No adverse effect expected.

Toxicological Data : Oral LD50 (mouse) : >20,000 mg/kg (3) Mutagen :

Negative (4)

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : The material is not biodegradable.

13. Disposal Considerations

Refer to local government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57—2 Delivery of Document, etc Sea
Water Protection Law

16. Other Information

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|-----------------------------|--|
| 1) The Test Report of Japan | Food Research Laboratories NO.503100554— 001 |
| 2) The Test Report of Japan | Food Research Laboratories NO.503100554— 005 |
| 3) The Test Report of Japan | Food Research Laboratories NO.50310054 — 003 |
| 4) The Test Report of Japan | Food Research Laboratories NO.09002238001—01 |

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MATERIAL SAFETY DATA SHEET
TIOSKYCOAT-CW

Revised on January 19,2016

1.Product and Company Identification

Product Name : Tio skycoat—CW
Recommended Use : Undercoating of PhotocataEyst
Manufacturer : Tio systems. Co. Ltd
3-5-15 Nabeshima, Saga-City, Saga Prefecture, Japan
Tel 81-952-36-8765 Fa X 81-952-36-8770

2. Hazards Identification

Non-hazardous Substance
Non-dangerous Goods

3. Composition and Information on Ingredients

Components : Methylpropylhydroxide, ethoxylated) bis (trimethylsiloxy) silane and Water CAS
Number : 67674—67—3
Chemical Formula : $(\text{CH}_3)_3\text{SiOSi}(\text{CH}_3)(\text{R})\text{OSi}(\text{CH}_3)_3$ Appearance &Odor : Odorless, Aqueous
Solution Specific Gravity : 1.0
pH : 5.1

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists. Skin contact: Wash skin with soap and water.

Ingestion : Give a glass of water. Seek medical advice.
Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty.

5. Fire Fighting Measures

Fire : Not considered to be a fire hazard.
Explosion : Not considered to be an explosion hazard.
Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire.

6. Accidental Release Measures Sweep and

discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses.

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Clear

Odor: Odorless

Specific Gravity : 1.0

pH : 5.1

Flash Point : Non-combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage. Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals-potassium, sodium

Hazardous Decomposition Products : None

11. Toxicological Information

Skin contact : May be a skin irritation

Eye contact : May be an eye irritation

Toxicological Data : Oral LD50 (mouse) : >20,000 mg/kg (1) Mutagen :
Not available.

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : No information found.

13. Disposal Considerations

Refer to local government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57-2 Delivery of Document, etc Sea Water
Protection Law

16. Other Information

1) The Test Report of Japan Food Research Laboratories NO.206081089-002-002

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MLATERIAL SAFETY DATA SHEET
TIOSKYCOAT-F

Revised on January 19,2016

1.Product and Company Identification

Product Name : Tio skycoat—F
Recommended Use : Photocatalyst
Manufacturer : Tio systems Co. Ltd
3-5-15 Nabeshima, Saga-City, Saga prefecturejapan Tel
81-952-36-8765 Fax 81-952-36-8770

2. Hazards Identification

Non—hazardous Substance
Non—dangerous Goods

3. Composition and Information on Ingredients

Components : Anatase Titanium Dioxide, Amorphous Titanium Peroxide and Water
CAS Number :13463-67- 7
Chemical Formula : TiO₂, Ti(O)O₂ Appearance & Odor : Odorless, Aqueous Solution Specific
Gravity : 1.0
pH : 7

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists. Skin
contact : Wash skin with soap and water.
Ingestion : Give a glass of water. Seek medical advice. Inhalation : Remove to fresh air. Get medical
attention for any breathing difficulty.

Fir Fighting Measures

Fire : Not considered to be a fire hazard.

Explosion : Not considered to be an explosion hazard.

Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire

6. Accidental Release Measures

Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Whitish yellow

Odor : Odorless

Specific Gravity : 1.0

pH : 7

Flash Point : Non—combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals—potassium, sodium Hazardous

Decomposition Products : None

11. Toxicological Information

Skin contact : Non skin irritation (1)

Eye contact : Non eye irritation (2)

Ingestion : No adverse effect expected.

Toxicological Data : Oral LD50 (mouse) : >20,000 fflg/kg (3) Mutagen :

Negative (4)

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : The material is not biodegradable.

13. Disposal Considerations

Refer to focal government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57 — 2 Delivery of Document, etc Sea
Water Protection Law

16. Other Information

- 1) The Test Report of Japan Food Research Laboratories N0.503100554—002
- 2) The Test Report of Japan Food Research Laboratories N0,503100554— 006
- 3) The Test Report of Japan Food Research Laboratories N0.50310054— 004 Food
- 4) The Test Report of Japan Food Research Laboratories N0.09002238001—01

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MATERIAL SAFETY DATA SHEET
TIOSKYCOAT-G

Revised on January 19, 2016

1. Product and Company Identification

Product Name : Tio skycoat ~-G
Recommended Use : Photocatalyst
Manufacturer : Tio systems Co. Ltd
3 - 5 - 15 Nabeshima, Saga-City, Saga prefecture, japan Tel
81-952-36-8765 Fax 81-952-36-8770

2. Hazards Identification

Non—hazardous Substance Non—dangerous Goods

3. Composition and Information on Ingredients

Components : Anatase Titanium Dioxide, Amorphous Titanium Peroxide and Water
CAS Number : 13463-67-7
Chemical Formula : TiO_2 , $Ti(O)_2O_2$
Appearance & Odor : Odorless, Aqueous Solution Specific Gravity : 1.0
pH : 7

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists.
Skin contact : Wash skin with soap and water.
Ingestion : Give a glass of water. Seek medical advice.
Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty.

5. Fire Fighting Measures

Fire : Not considered to be a fire hazard.
Explosion : Not considered to be an explosion hazard.
Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire.

6. Accidental Release Measures Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses.

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls/Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Whitish yellow

Odor : Odorless

Specific Gravity : 1.0

pH : 7

Flash point: Non-combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals - potassium, sodium

Hazardous Decomposition Products : None

11. Toxicological Information

Skin contact : Non skin irritation (1)

Eye contact : Non eye irritation (2)

Ingestion : No adverse effect expected.

Toxicological Data : Oral LD50 (mouse) : >20,000 fflg/kg (3) Mutagen :

Negative (4)

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : The material is not biodegradable.

13. Disposal Considerations

Refer to focal government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Indush'y Safety & Health Act : Article 57~2 Delivery of Document, etc Sea water
Protection Law

16. Other Information

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|-----------------------------|--|
| 1) The Test Report of Japan | Food Research Laboratories NO.503100554—002 |
| 2) The Test Report of Japan | Food Research Laboratories NO.503100554—006 Food |
| 3) The Test Report of Japan | Research Laboratories NO.50310054— 004 Food |
| 4) The Test Report of Japan | Research Laboratories NO.09002238001—01 |

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MATERIAL SAFETY DATA SHEET
TIOSKYCOAPGW

Revised on January 19, 2016

1. Product and Company Identification

Product Name: Tioskycoat-GW Recommended Use: Photocatalyst
Manufacturer: Tio Systems.Co.Ltd
3-5-1 SNabeshima, Saga-City, Saga Prefecture, Japan
Tel 81-952-36-8765 Fax 81-952-36-8770

2. Hazards Identification

Non—hazardous Substance Non—dangerous Goods

3. Composition and Information on Ingredients

Components: Methy 1(Propyl hydroxide, Ethoxylated) Bis (Trimethyl siloxy) Silane and water CAS Number :
67674 - 67 — 3

Chemical Formula : $(\text{CH}_3)_3\text{Si}(\text{O}(\text{CH}_2\text{CH}_2\text{O})_n\text{Si}(\text{CH}_3)_2)_2\text{Si}(\text{CH}_3)_2\text{R-OH}$ ($\text{C}_{2n+4}\text{H}_{4n+10}\text{O}_{n+1}$) n C₃H₆ Odorless, Aqueous

Appearance & Odor : Solution

Specific Gravity : 1.0

pH : 5.1

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists.

Skin contact : Wash skin with soap and water.

Ingestion : Give a glass of water. Seek medical advice.

Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty.

5. Fire Fighting Measures

Fire : Not considered to be a fire hazard.

Explosion : Not considered to be an explosion hazard.

Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire.

6. Accidental Release Measures Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses.

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls/Personal Protection

Occupational Exposure limits : No value assigned.

Persona 1 Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Clear

Odor : Odorless

Specific Gravity :1.0

pH : 5.1

Flash point: Non-combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals - potassium, sodium

Hazardous Decomposition Products : None

11. Toxicological Information

Skin contact : May be a skin irritant

Eye contact : May be an eye irritant

Toxicological Data : Oral LD50 (mouse) : >20,000 mg/kg ϕ 1)

Mutagen : Not available

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : No information found.

13. Disposal Considerations

Refer to local government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57 — 2 Delivery of Document, etc Sea water
Protection Law

16. Other Information

1)The Test Report of Japan Food Research Laboratories NO.206081089—002

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MATERIAL SAFETY DATA SHEET
TIOSKYCOAT-K

Revised on January 19,2016

1.Product and Company Identification

Product Name : Tio skycoat — K
Recommended Use : Photocatalyst
Manufacturer : Tio systems Co. Ltd
3 — 5—13 Nabeshima, Saga-City, Saga prefocture, japan Tel
81-952-36-8765 Fax 81-952-36-8770

2. Hazards Identification

Non—hazardous Substance
Non™dangerous Goods

3. Composition and Information on Ingredients

Components : Anatase Titanium Dioxide, Amorphous Titanium Peroxide, Titanium phosphate,
Diiodomethyl-P-Tolylsulfone and Water.
CAS Number : 13463-67-7, 15578-51-5,20018-09-1
Chemical Formula : TiO_2 , $Ti(O)_2$, $Ti_3(PO_4)_4$, $I_2CHSO_2C_6H_4CH_3$ Appearance & Odor : Odorless,
Aqueous Solution Specific Gravity : 1.0
pH : 7

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists.
Skin contact : Wash skin with soap and water.
Ingestion : Give a glass of water. Seek medical advice.
Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty.

5. Fire Fighting Measures

Fire : Not considered to be a fire hazard.
Explosion : Not considered to be an explosion hazard.
Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire

6. Accidental Release Measures Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Whitish yellow

Odor : Odorless

Specific Gravity : 1.0

pH : 7

Flash Point : Non—combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't freeze below the freezing point.

Incompatibility : Water reactive metals—potassium, sodium Hazardous

Decomposition Products : None

11. Toxicological Information

Skin contact : Not available Eye contact : Not available

Ingestion : Not available

Toxicological Data : Oral LD50 (mouse) : >20,000 mg/kg (1) Mutagen : Not available

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : No information found.

13. Disposal Considerations

Refer to focal government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57—2 Delivery of Document, etc Sea
Water Protection Law

16. Other Information

1)The Test Report of Japan Food Research Laboratories NO.206081089— 001

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MLATERIAL SAFETY DATA SHEET
TIOSKYCOAT-NN

Revised on January 19, 2016

I. Product and Company Identification

Product Name : Tio skycoat—NN Recommended Use : Photocatalyst

Manufacturer : Tio systems Co. Ltd

3-5-15 Nabeshima, Saga-City, Saga prefecture, japan

Tel 81-952-36-8765 Fax 81-952-36-8770

2. Hazards Identification

Non—hazardous Substance

Non —dangerous Goods

3. Composition and Information on Ingredients

Components : Anatase Titanium Dioxide, Amorphous Titanium Peroxide and Water

CAS Number :13463-67-7

Chemical Formula : TiO₂, Ti(O)O₂ Appearance & Odor : Odorless, Aqueous Solution

Specific Gravity :1.0

pH : 7

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists. Skin

contact : Wash skin with soap and water.

Ingestion : Give a glass of water. Seek medical advice.

Inhalation : Remove to fi-esh air. Get medical attention for any breathing difficulty.

5. Fir Fighting Measures

Fire : Not considered to be a fire hazard.

Explosion : Not considered to be an explosion hazard.

Fire Extinguishing Media : Use any means suitable for extinguishing surrounding fire

6. Accidental Release Measures Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color : Whitish yellow

Odor : Odorless

Specific Gravity : 1.0

pH : 7

Flash Point : Non—combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals—potassium, sodium

Hazardous Decomposition Products : None

11. Toxicological Information

Skin contact : Non skin irritation (1) Eye contact : Non eye irritation (2)

Ingestion : No adverse effect expected.

Toxicological Data : Oral LD50 (mouse) : >20,000 mg/kg (3)

Mutagen : Negative (4)

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : The material is not biodegradable.

13. Disposal Considerations

Refer to focal government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57—2 Delivery of Document, etc
Sea Water Protection Law

16. Other Information

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|-----------------------------|---|
| 1) The Test Report of Japan | |
| 2) The Test Report of Japan | Food Research Laboratories N0.503100554— 002 Food |
| 3) The Test Report of Japan | Research Laboratories N0.503100554— 006 Food |
| 4) The Test Report of Japan | Research Laboratories N0.50310054—004 Food |
| | Research Laboratories N0.09002238001—01 |

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MLATERIAL SAFETY DATA SHEET
TIOSKYCOAr-V

Revised on Januaiy 19, 2016

1. Product and Company Identification

Product Name : Tio skycoat—V
Recommended Use : Photocatalyst
Manufacturer : Tio systems Co. Ltd
3-5-15 Nabeshima, Saga-City, Saga prefecturejapan
Tel 81-952-36-8765 Fax 81-952-36-8770

2. Hazards Identification

Non—hazardous Substance Non—dangerous Goods

3. Composition and Information on Ingredients

Components : Anatase Titanium Dioxide, Rutile Titanium Dioxide,
Amorphous Titanium Peroxide and Water
CAS Number : 13463-67-7, 1317-80-2
Chemical Formula : TiO₂, Ti(O)O₂
Appearance & Odor : Odorless, Aqueous Solution
Specific Gravity :1.0
pH : 7

4. First Aid Measures

Eye contact : Wash out immediately with water. Get medical attention if irritation persists. Skin contact : Wash skin with soap and water.
Ingestion : Give a glass of water. Seek medical advice. Inhalation : Remove to fresh air. Get medical attention for any breathing difficulty.

5. Fir Fighting Measures

Fire : Not considered to be a fire hazard.
Explosion : Not considered to be an explosion hazard.
Fire Extinguishing Media : Use any means suitable for extinguishing suirounding fire

6. Accidental Release Measures Sweep and discard.

7. Handling and Storage

Precautions for safe handling : Avoid skin and eye contact. Wear suitable protective clothing, gloves and glasses

Conditions for safe storage : Store in a cool place and out of direct sunlight. Keep containers closed when not in use.

8. Exposure Controls / Personal Protection

Occupational Exposure limits : No value assigned.

Personal Protection : Wear overalls, safety glasses, impervious gloves.

9. Physical and Chemical Properties

Physical state : Solution

Color: White

Odor: Odorless

Specific Gravity :1.0

pH : 7

Flash Point : Non—combustible and non-flammable

10. Stability and Reactivity

Chemical Stability : Stable under ordinary conditions of use and storage.

Conditions to Avoid : Don't leave below the freezing point.

Incompatibility : Water reactive metals—potassium, sodium

Hazardous Decomposition Products : None

11. Toxicological Information

Skin contact : Not available.

Eye contact : Not available.

Ingestion : Not available.

Toxicological Data : Not available. Mutagen : Not available.

12. Ecological Information

Environmental Toxicity : No information found.
Products of Biodegradation : The material is not biodegradable.

13. Disposal Considerations

Refer to focal government authority for disposal recommendations.
Normally suitable for disposal at approved land waste site.

14. Transport Information

Not regulated

15. Regulatory Information

Industry Safety & Health Act : Article 57—2 Delivery of Document, etc Sea Water
Protection Law

16. Other Information

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use.

CONFIDENTIAL

TiCoat® Training Manual

Background

Titanium Dioxide (TiO₂) has found a wide range of applications, including paint, sunscreen, and food coloring. Its use started in the late 1800s. It is used in food and hygienic items including **powdered donuts, toothpaste**, paints, varnishes, paper, plastics, sunscreens, reflective screens and many more. It has long been known to be **safe for humans and animals (EPA)**.

TiO₂ is also a photocatalyst. A **photocatalyst** is a material which absorbs light to bring it to a higher energy level, and provides such energy to a reacting substance to make a chemical reaction occur. In the case of TiCoat, TiO₂ uses light energy to cause the destruction of (micro/nano) organic matter like viruses, bacteria, fungi, and volatile organic chemicals (VOCs).

As powerful as TiO₂ is, researchers have been challenged to develop a means to bind TiO₂ to surfaces so that they can remain stable and bonded for a long time -- so the photocatalyst effect can occur. The binder and top coat are symbiotic coatings that work together as a system to create their effect.

Previously, binders were always organic and were broken down by the very TiO₂ particles that they sought to protect. This meant that the TiO₂ coatings would flake off and need to be reapplied.

This is TiCoat®'s secret weapon -- a **powerful binder** to match its highly effective TiO₂ coating, to create a long lasting photocatalytic layer to any surface.

About Us

Our parent company, based in Japan, developed this unique TiO₂ coating system more than 20 years ago, and implementations of the product in the market extend across that same duration. Their coating is as hard as cellular phone glass screens, lasts for decades, and allows the top coat to be 100% pure TiO₂ (maximum cleaning power). It will never come off unless mechanically removed by grinding or sanding.

You are the first people to see this special coating outside of Japan. TiCoat® is exclusively licensed to manufacture the product in the USA under a specially-protected formula. Our R&D labs have been expanding and improving the system based on the latest research and testing.

With the latest applied improvements, our coating is truly unique in the world.

Coating Types and Uses

There are essentially four types of coatings we sell:

- **TiCoat® UVA** - Activated by 365-390nm UV-A light sources (peak activity @380nm), including fluorescent lights and sunlight. TiCoat® UVA can be used for antifouling, microorganism surface disinfection, deodorizing and self-cleaning surfaces.
- **TiCoat® V** - Activated by 365-390nm UV-A and/or visible light sources, including standard white LED lights. TiCoat® V has similar uses as TiCoat® UVA, but is intended for spaces that don't have any UV light sources.
- **TiCoat® G** - Activated by 365-390nm UV-A light sources (peak activity @380nm), including fluorescent lights and sunlight. TiCoat® G is used on glass, transparent and dark smooth shiny surfaces.
- **TiCoat® VC** (coming soon) - Activated by 365-390nm UV-A and/or visible light sources, including standard white LED lights. It is also antiviral in the dark.

TiCoat® VC and TiCoat® V are essentially the same coating, except TiCoat® VC also has antiviral properties in absolute darkness. TiCoat® VC is currently being tested in our lab for final use.

Glass surfaces require special handling with TiCoat®. Glass surfaces require polishing to make them fully clean to accept the binder and TiO₂ coating.

The glass coating is designed to make glass crystal clear and self-cleaning; glass can be affected by the non-glass coatings so you need to be careful when applying. You want to protect glass windows while spraying UV-A or V coatings nearby as it can create a fogging effect on the glass if not protected.

Typical Methods Of Installation

The coating can be easily applied by spraying onto surfaces using a traditional automotive paint spray gun.

TiCoat coatings will be installed in the following fashion:

Product

On all exterior walls, except glass:

- Preferably use TiCoat UV-A.
- On dark smooth surfaces, consider using TiCoat Glass (100% optically clear).

On all interior walls, except glass:

- Use TiCoat Visible Light for LED lighting. UV-A can be used when there is sufficient fluorescent lighting.¹

Preparation

Safety: Wear protective glasses and a respirator. Same type as painters use.

For all walls:

- Make sure there is no loose dirt, dust or oily substance on the surface.
- Cleaning may be done using soap, cleaning agents and (high pressure) water. Always make sure the surface is free of any agents before coating.

Application

Steps to apply TiCoat UV-A:

- Clean the surface if needed
- Apply 3 coats of TiCoat Binder A+B (ratio 1:1)
- Apply 3 coats of TiCoat UV-A

¹ Lighting levels are assessed as part of the design and implementation process using light sensors and apps.

Steps to apply TiCoat Visible Light:

- Clean the surface if needed
- Apply 3 coats of TiCoat Visible Light
(For extra strong bonding on very smooth/glazed surfaces optionally 2 base coats of Binder A+B (ratio 1:1) can be used.)

On dark or clear (non-glass) surfaces:

- Application steps are similar to the Glass application steps, except there is no need for polishing

On Glass (windows, solar panels), dark or clear surfaces:

- Use TiCoat Glass

Steps to apply TiCoat Glass:

- Polish glass surfaces using Cerium Oxide (n/a for dark and non-glass clear surfaces)
- Apply 2 coats of TiCoat Binder A+B (ratio 1:1) (For dark surfaces: Use 3 coats. For clear non-glass surfaces: 2 coats)
- Apply 3 coats of TiCoat Glass A+B (ratio 1:1)

Note for all types of coats:

You can immediately apply the next coat after making sure that the previous coat has dried completely. Applying more coats makes the surface stronger and more powerful, but after three coats, generally you reach the point of diminishing returns. You cannot really overapply the coating, but the smooth even coating techniques taught in training are meant to teach consistent application of the coatings.

Quoting Jobs

The standard practice of quoting a job is as follows:

1. Calculation of all surface areas to be treated
2. Identify the type of light source in the building
3. Identify the intensity of the current lighting
4. Identify the types of surfaces to be treated

Calculation of surface areas

Will you be treating floors, ceilings, walls, desks, chairs, windows? Are there wall coverings (e.g., posters) on the wall that need to be removed before application? Will you want to coat the posters when back on the wall too?

What type of surface? Concrete is porous and requires more coating than smooth tiles and windows for example. How much binder is needed? How much topcoat is needed?

Refer to the table with coverages. Roughly, a typical coverage is 1200 sq.ft/gal. This means 0.5gal of Binder A + 0.5gal of Binder B + 1 gal of Topcoat will cover 1200 sq.ft of surface area (resulting in 3 Binder coats + 3 Top coats).

Will you be doing the inside and outside too? Interior application might be for antimicrobial and odor elimination, where exterior application might be for keeping surfaces clean.

What about related surfaces? Makes no sense to secure a school if the school buses taking kids to and from school are left untreated. Think about the lifecycle of your client and their facilities, and how you can support that whole lifecycle with different coatings.

FAQ

Want to know more? Check out the FAQ on our website for more current information.



Todd Hodrinsky

VP Marketing and Product Development

417 mulberry Rd.

Mansfield Center, CT. 06250

Email: **thodrinsky@ticoat.com**

Phone: 860-634-1790

www.ticoat.com for more information





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

June 28, 2005

ACTION MEMORANDUM

SUBJECT: Inert Ingredient Tolerance Reassessment – Titanium Dioxide

FROM: Dan Rosenblatt, Chief
Minor Use, Inerts, and Emergency Response Branch

TO: Lois A. Rossi, Director
Registration Division

I. FQPA REASSESSMENT ACTION

Action: Reassessment of two (2) inert ingredient exemptions from the requirement of a tolerance.

Chemical and Use Summary: See table below.

Table 1. Tolerance Exemptions Being Reassessed in this Document				
Tolerance Exemption Expression	40 CFR §	Use Pattern (Pesticidal)	CAS Reg No.	List Classification
Titanium dioxide (CAS Reg. No. 13463-67-7)	180.920 ^{1/}	Pigment/coloring agent in plastic bags used to wrap growing banana (preharvest), colorant on seeds for planting	13463-67-7	4B
Titanium dioxide (CAS Reg. No. 13463-67-7)	180.930 ^{2/}	Pigment/colorant in pesticide formulations for animal tag		


1. Residues listed in 40 CFR §180.920 [formerly 40 CFR§ 180.1001(d)] are exempted from the requirement of a tolerance when used as inert ingredients in pesticide formulations when applied to growing crops only.
2. Residues listed in 40 CFR §180.930 [formerly 40 CFR§ 180.1001(e)] are exempted from the requirement of a tolerance when used as inert ingredients in pesticide formulations when applied to animals.

Additionally, under 40 CFR §180.1195, titanium dioxide is exempted from the requirement of a tolerance for residues in or on growing crops, when used as an inert ingredient (UV protectant) in microencapsulated formulations of the insecticide lambda-cyhalothrin at no more than 3.0% by weight of the formulation. However this tolerance exemption was established after August 3, 1996, and is therefore not subject to the tolerance reassessment provision of FQPA.

List Classification Determination: Titanium dioxide is currently classified as a List 4B inert ingredient. Based on the non-bioavailability of titanium dioxide and lack of concern for adverse human health or nontarget organism effects, titanium dioxide can be reclassified as a List 4A inert ingredient.

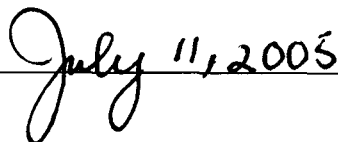
II. MANAGEMENT CONCURRENCE

I concur with the reassessment of the two (2) exemptions from the requirement of a tolerance for the inert ingredient titanium dioxide, and with the List classification determination, as described above. I consider the exemption from the requirement of a tolerance for titanium dioxide established in 40 CFR §180.920 [formerly 40 CFR§180.1001(d)] and the exemption from the requirement of a tolerance for titanium dioxide established in 40 CFR §180.930 [formerly 40 CFR§180.1001(e)] to be maintained and reassessed as of the date of my signature, below. It should also be noted that while the exemption from the requirement of a tolerance for titanium dioxide established under 40 CFR 180.1195 is not part of this tolerance reassessment decision, the reasonable certainty of no harm safety finding made herein includes consideration of aggregate exposures to titanium dioxide resulting from use under all extant tolerance exemptions under 40 CFR Part 180. A Federal Register Notice regarding this tolerance exemption reassessment decision will be published in the near future.



Lois A. Rossi, Director
Registration Division

Date:



cc: Debbie Edwards, SRRD
Joe Nevola, SRRD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

June 28, 2005

MEMORANDUM

SUBJECT: Reassessment of the Exemptions from the Requirement of a Tolerance for Titanium Dioxide

FROM: Kerry Leifer, Inerts Team Leader
Minor Use, Inerts and Emergency Response Branch
Registration Division (7505C)

THRU: Pauline Wagner, Inerts Coordinator *Pauline Wagner 6/28/05*
Registration Division (7505C)

TO: Dan Rosenblatt, Chief
Minor Use, Inerts and Emergency Response Branch
Registration Division (7505C)

Background

Attached is the science assessment for titanium dioxide. The purpose of this document is to reassess two existing exemptions from the requirement of a tolerance for residues of this inert ingredient as required under the Food Quality Protection Act (FQPA). This assessment summarizes available information on the use, physical/chemical properties, toxicological effects, and exposure profiles of titanium dioxide. In performing this assessment, the Agency has relied extensively upon reviews of titanium dioxide previously performed by the European Commission Scientific Committee on Food (SCF), the Joint Expert Committee on Food Additives of the Food and Agriculture Organization/World Health Organization (JEFCA), and the European Food Safety Authority (EFSA).

Executive Summary

This report evaluates titanium dioxide (CAS Reg. No. 13463-67-7), a pesticide inert ingredient for which two exemptions from the requirement of a tolerance exists for its residues when used in pesticide formulations applied to growing crops only under 40 CFR §180.920 and in pesticide formulations applied to animals under 40 CFR §180.930. Titanium dioxide is a widely used inorganic white pigment that is produced from mined sources of titanium.

Titanium dioxide pigments are white inorganic pigments used primarily in the production of paints, printing inks, paper and plastic products. Titanium dioxide is also used in many white or colored products including foods, cosmetics, UV skin protection products, ceramics, fibers, and rubber products.

This hazard assessment relies upon peer-reviewed assessments of titanium dioxide performed by the European Commission Scientific Committee on Food (SCF), the Joint Expert Committee on Food Additives of the Food and Agriculture Organization/World Health Organization (JECFA), and the European Food Safety Authority's (EFSA) Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food. Based on its evaluation of the available data on titanium dioxide, JECFA concluded that the establishment of an acceptable daily intake was unnecessary. In its safety review of certain food colorants, the SCF reaffirmed an earlier determination regarding the use of titanium dioxide as a colorant in foodstuffs and concluded that titanium dioxide was acceptable for general food use without the need for establishment of an acceptable daily intake. In its most recent evaluation of titanium dioxide, EFSA concurred with the JECFA assessment of titanium dioxide and concluded that the use of titanium dioxide would not pose any safety concerns. Both the JECFA and EFSA evaluations of titanium dioxide noted there is no absorption or tissue storage of titanium dioxide.

Titanium dioxide is not bioavailable as it is not absorbed via the gastrointestinal tract or through the skin. Inhalation exposure to high concentrations of titanium dioxide particles has been shown to result in pulmonary effects in rats, but these effects may be a rat-specific threshold phenomenon, possibly of little relevance to humans. Epidemiological data suggest that there is no carcinogenic effect associated with workplace exposure to titanium dioxide dust. Titanium dioxide is not carcinogenic in mice or rat dietary studies and no adverse effects were observed in chronic rat studies at concentrations up to 5% in the diet.

Based on the insoluble nature of titanium dioxide in water and the low acute toxicity of titanium dioxide to freshwater fish, there are no nontarget aquatic species risk concerns resulting from the use of titanium dioxide as an inert ingredient. Based on the lack of absorption, as well as no identified toxicological effects of concern in animal testing, there are no risk concerns for nontarget terrestrial organisms resulting from the use of titanium dioxide as an inert ingredient.

Taking into consideration all available information on titanium dioxide, it has been determined that there is a reasonable certainty that no harm to any population subgroup will

result from aggregate exposure to titanium dioxide when considering dietary exposure and all other nonoccupational sources of pesticide exposure for which there is reliable information. Therefore, it is recommended that the exemptions from the requirement of a tolerance established for residues of titanium dioxide in/on raw agricultural commodities and animals can be considered reassessed as safe under section 408(q) of the FFDCA.

I. Introduction

This report evaluates titanium dioxide (CAS Reg. No. 13463-67-7), a pesticide inert ingredient for which two exemptions from the requirement of a tolerance exist for its residues when used in pesticide formulations applied to growing crops only under 40 CFR §180.920 and in pesticide formulations applied to animals under 40 CFR §180.930. An exemption from the requirement of a tolerance was established for titanium dioxide under 40 CFR §180.1195 for use as an inert ingredient (UV protectant) in microencapsulated formulations of lambda-cyhalothrin on March 25, 1998 (EPA 1998), however that rule did not specifically address the reassessment of the two above-noted tolerance exemptions for titanium dioxide.

Titanium dioxide is a widely used inorganic white pigment that is produced from mined sources of titanium, with 98% of all mined titanium used in the production of titanium dioxide. The most commercially significant mineral forms of titanium dioxide are rutile and anatase (Terran 1997). The production of titanium dioxide pigment in the United States in 2003 was 1.4 million metric tons (Gambogi 2003).

II. Use Information

Pesticides

The two tolerance exemptions for titanium dioxide being reassessed in this document are given in Table 1 below.

Table 1. Tolerance Exemptions Being Reassessed in this Document				
Tolerance Exemption Expression	40 CFR §	Use Pattern (Pesticidal)	CAS Reg No.	List Classification
Titanium dioxide (CAS Reg No. 13463-67-7)	180.920 ^{1/}	Pigment/coloring agent in plastic bags used to wrap growing banana (preharvest), colorant on seeds for planting	13463-67-7	4B
Titanium dioxide (CAS Reg. No. 13463-67-7)	180.930 ^{2/}	Pigment/colorant in pesticide formulations for animal tag		

1. Residues listed in 40 CFR §180.920 [formerly 40 CFR§ 180.1001(d)] are exempted from the requirement of a tolerance when used as inert ingredients in pesticide formulations when applied to growing crops only.

2. Residues listed in 40 CFR §180.930 [formerly 40 CFR§ 180.1001(e)] are exempted from the requirement of a tolerance when used as inert ingredients in pesticide formulations when applied to animals.

Additionally, under 40 CFR §180.1195, titanium dioxide is exempted from the requirement of a tolerance for residues in or on growing crops, when used as an inert ingredient (UV protectant) in microencapsulated formulations of the insecticide lambda-cyhalothrin at no more than 3.0% by weight of the formulation (EPA 1998). Since this tolerance exemption was established after August 3, 1996, it is not subject to the tolerance reassessment provision of FQPA.

Other Uses

Titanium dioxide pigments are white inorganic pigments used primarily in the production of paints, printing inks, paper and plastic products. Titanium dioxide is also used in many white or colored products including foods, cosmetics, UV skin protection products, ceramics, fibers, and rubber products. Titanium dioxide provides opacity and imparts whiteness and brightness to the products in which it is used, as well as affording protection from UV degradation (CEFIC 2002).

Titanium dioxide is approved by the Food and Drug Administration (FDA) as a color additive exempt from certification for the following uses: under 21 CFR §73.575 for coloring foods at levels up to one percent by weight; under 21 CFR §73.1575 for coloring ingested and externally applied drugs generally; and under 21 CFR §73.2575 for use in cosmetics, including cosmetics intended for use in the area of the eye.

III. Physical and Chemical Properties

Some of the physical and chemical characteristics of titanium dioxide are given in Table 2. below.

Table 2. Titanium Dioxide Physical and Chemical Properties		
Parameter	Value	Source
Structure	$O = Ti = O$	ChemIDplus 2005
Physical Form	Solid	HSDB 2005

Table 2. Titanium Dioxide Physical and Chemical Properties		
Parameter	Value	Source
Molecular Weight	79.865	ChemIDplus 2005
Water Solubility	none	IPCS 1993
Melting Point	1843 °C (M)	HSDB 2005
Vapor Pressure	Not applicable	
Henry's Law Constant	Not applicable	
Octanol-Water Partition Coefficient (K _{ow})	Not applicable	

IV. Hazard Assessment

A. Hazard Profile

This hazard assessment primarily relies upon peer-reviewed assessments of titanium dioxide performed by European Commission Scientific Committee on Food (SCF), the Joint Expert Committee on Food Additives of the Food and Agriculture Organization/World Health Organization (JECFA), and the European Food Safety Authority's (EFSA) Scientific Panel on Food Additives, Flavourings, Processing Aids and Materials in Contact with Food.

The JECFA evaluation of titanium dioxide states that "Titanium dioxide is a very insoluble compound. The studies in several species, including man, show neither significant absorption nor tissue storage following ingestion of titanium dioxide." Based on its evaluation of the available data on titanium dioxide, JECFA concluded that the "Establishment of an acceptable daily intake¹ for man is considered unnecessary" (JECFA 1969).

In its safety review of certain food colorants, the SCF reaffirmed an earlier determination regarding the use of titanium dioxide as a colorant in foodstuffs and concluded that titanium dioxide was acceptable for general food use with no established ADI (SCF 1977). The responsibilities for European Commission risk assessments for food additives is now the responsibility of the EFSA which, in its most recent evaluation of titanium dioxide, concurred with the JECFA assessment of titanium dioxide and concluded that the use of titanium dioxide would not pose any safety concerns (EFSA 2004).

¹ADI (Acceptable Daily Intake): An estimate by JECFA of the amount of a food additive, expressed on a body weight basis, that can be ingested daily over a lifetime without appreciable health risk

Titanium dioxide is not dermally absorbed by humans (Plfucker et al 2001). Titanium dioxide is a frequently used compound in lung clearance studies, where a biologically inert substance is required, however inhalation of high concentrations of fine or ultrafine titanium dioxide particles has been shown to result in pulmonary inflammation, fibrosis, and lung tumors in rats (Lee et al 1985). In contrast to the results in rats, inhalation effects were not observed in mice and hamsters and may be a rat-specific threshold phenomenon, dependent upon lung overloading at high exposure concentrations and possibly of little relevance to humans. Epidemiological data suggest that there is no carcinogenic effect associated with workplace exposure to titanium dioxide dust (Hext et al 2005).

B. Toxicological Data

The EFSA evaluation of titanium dioxide noted the toxicological database considered by JECFA and referenced additional key toxicological data on chronic toxicity and carcinogenicity. The EFSA evaluation of the additional toxicological data reported “a NCI carcinogenicity study was conducted in groups of 50 per sex of Fischer 344 rats and B6C3F1 mice dosed at 0, 25000 and 50000 mg titanium dioxide /kg diet for 103 weeks (NCI, 1979). Increased incidences of thyroid C-cell adenomas or carcinomas were observed in female rats but these increases were neither statistically significant nor considered to be related to administration of the test compound. Tumour incidences in the other groups were not significantly higher than in controls. A chronic dietary study administration of titanium dioxide coated mica at 0, 1, 2 and 5% in Fischer 344 rats for 130 weeks showed no toxicological or carcinogenic effects (Bernard et al., 1990).”

C. Metabolism And Pharmacokinetics

Both the JECFA and EFSA evaluations of titanium dioxide noted that there is no absorption or tissue storage of titanium dioxide. The World Health Organization (WHO) Environmental Health Criteria for titanium, an evaluation of the effects of titanium on human health and the quality of the environment, states that “titanium compounds are poorly absorbed from the gastrointestinal tract, which is the main route of exposure for the general population” (WHO 1982).

There is no dermal absorption of titanium dioxide. Inhalation effects resulting from titanium dioxide are limited to localized lung effects. Adverse effects resulting from inhalation studies of titanium dioxide have been confined to the respiratory tract and lung-associated lymphatic tissues (NAS 1999).

D. Special Considerations for Infants and Children

Based on the lack of absorption, history of safe use as a pigment and food additive, low toxicity, and lack of concern for human health effects, a safety factor analysis has not been used

to assess the risks resulting from the use of titanium dioxide as a pesticide inert ingredient and an additional tenfold safety factor for the protection of infants and children is unnecessary.

V. Exposure Assessment

Titanium dioxide is not absorbed via the oral or dermal routes of exposure, therefore no further oral or dermal exposure assessment is necessary. Exposures to high concentrations of fine or ultrafine titanium dioxide particles have been shown to result in pulmonary effects in rats but is likely a rat-specific threshold phenomenon, dependent upon lung overloading at high exposure concentrations and possibly of little relevance to humans. Since the pesticide inert ingredient use of titanium dioxide is as a pigment in which the titanium dioxide is bound in a polymeric matrix and not present as particulate titanium dioxide, there would be no inhalation exposure to titanium dioxide particles resulting from its use as a pesticide inert ingredient and no further inhalation exposure assessment is necessary.

VI. Aggregate Exposures

In examining aggregate exposure, FFDCa section 408 directs EPA to consider available information concerning exposures from the pesticide residue in food and all other non-occupational exposures, including drinking water from ground water or surface water and exposure through pesticide use in gardens, lawns, or buildings (residential and other indoor uses).

For titanium dioxide, a qualitative assessment for all pathways of human exposure (food, drinking water, and residential) is appropriate given the general lack of bioavailability of titanium dioxide, its insolubility in water, and the lack of human health concerns associated with exposure to titanium dioxide.

VII. Cumulative Exposure

Section 408(b)(2)(D)(v) of the FFDCa requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider "available information" concerning the cumulative effects of a particular pesticide's residues and "other substances that have a common mechanism of toxicity."

Unlike other pesticides for which EPA has followed a cumulative risk approach based on a common mechanism of toxicity, EPA has not made a common mechanism of toxicity finding as to titanium dioxide and any other substances and this material does not appear to produce a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has not assumed that titanium dioxide has a common mechanism of toxicity with other substances. For information regarding EPA's efforts to determine which chemicals have a common mechanism of toxicity and to evaluate the cumulative effects of such chemicals, see the policy statements released by EPA concerning common mechanism determinations and

procedures for cumulating effects from substances found to have a common mechanism on EPA's website at <http://www.epa.gov/pesticides/cumulative/>

VIII. Environmental Fate Characterization/Drinking Water Considerations

Titanium dioxide is a stable compound that is insoluble in water and therefore would not be expected to be present in drinking water sources as a result of pesticide inert ingredient use.

IX. Human Health Risk Characterization

Evaluations of titanium dioxide by JECFA, SCF, and EFSA have each concluded that there are no safety concerns associated with the use of titanium dioxide as a food additive at levels ranging up to 3%. Taking into consideration all available information on titanium dioxide, it has been determined that there is a reasonable certainty that no harm to any population subgroup will result from aggregate exposure to titanium dioxide when considering dietary exposure and all other nonoccupational sources of pesticide exposure for which there is reliable information. Therefore, it is recommended that the exemptions from the requirement of a tolerance established for residues of titanium dioxide in/on raw agricultural commodities and animals can be considered reassessed as safe under section 408(q) of the FFDCA.

X. Ecotoxicity and Ecological Risk Characterization

The available ecotoxicity data on titanium dioxide are primarily limited to acute aquatic toxicity studies. The acute aquatic LC₅₀ of titanium dioxide in fathead minnows is >1000 mg/L (ECOTOX 2002). Based on the insoluble nature of titanium dioxide in water and the low acute toxicity of titanium dioxide to freshwater fish, there are no nontarget aquatic species risk concerns resulting from the use of titanium dioxide as an inert ingredient. Based on the lack of absorption as well as no identified toxicological effects of concern in animal testing, there are also no risk concerns for nontarget terrestrial organisms resulting from the use of titanium dioxide as an inert ingredient.

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Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

Date: November 13, 2020

Mr. Todd Hodrinsky
TiCoat USA
417 Mulberry Road
Mansfield, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

Project: **TiCoat UV-A and V Test**
Lab I.D.: **201102-16, -17**

Dear Mr. Hodrinsky:


The **analytical results** for the liquid samples, received by our laboratory on November 2, 2020, (via UPS 2nd Day Air), are attached. The samples were received intact and accompanying chain of custody.

Enviro-Chem appreciates the opportunity to provide you and your company this and other services. Please do not hesitate to call us if you have any questions.

Sincerely,



Curtis Desilets
Vice President/Program Manager



Andy Wang
Laboratory Manager

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: **TiCoat USA**
417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: **TiCoat UV-A and V Test**

MATRIX: LIQUID

DATE RECEIVED: 11/02/20

SAMPLING DATE: _____

DATE ANALYZED: 11/02/20

REPORT TO: MR. TODD HODRINSKY

DATE REPORTED: 11/13/20

SAMPLE I.D.: **V Type Coating**

LAB I.D.: 201102-16

PARAMETER	UNIT	SAMPLE RESULT	METHOD
pH	pH UNITS	6.67	EPA 9040B
FLASH POINT (PENSKY-MARTENS CLOSED-CUP METHOD)	DEG F	>200	EPA 1010

COMMENTS:

DEG F = Degree Fahrenheit

> = Greater than

DATA REVIEWED AND APPROVED BY: 
CAL-DHS ELAP CERTIFICATE No.: 1555

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Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: **TiCoat UV-A and V Test**

MATRIX: LIQUID

DATE RECEIVED: 11/02/20

SAMPLING DATE: _____

DATE ANALYZED: 11/02/20

REPORT TO: MR. TODD HODRINSKY

DATE REPORTED: 11/13/20

SAMPLE I.D.: **UV-A and Binder**

LAB I.D.: 201102-17

PARAMETER	UNIT	SAMPLE RESULT	METHOD
pH	pH UNITS	6.74	EPA 9040B
FLASH POINT (PENSKY-MARTENS CLOSED-CUP METHOD)	DEG F	>200	EPA 1010

COMMENTS:

DEG F = Degree Fahrenheit

> = Greater than

DATA REVIEWED AND APPROVED BY: 
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

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417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: **TiCoat UV-A and V Test**
MATRIX: LIQUID DATE RECEIVED: 11/02/20
SAMPLING DATE: _____ DATE ANALYZED: 11/03/20
REPORT TO: MR. TODD HODRINSKY DATE REPORTED: 11/13/20

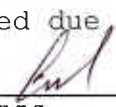
SAMPLE I.D.: **V Type Coating** LAB I.D.: 201102-16

TOTAL METALS ANALYSIS
UNIT: mg/L = MILLIGRAM PER LITER = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	EPA METHOD
Antimony (Sb)	ND	0.02	10*	200.7
Arsenic (As)	ND	0.01	10*	200.7
Barium (Ba)	ND	0.10	10*	200.7
Beryllium (Be)	ND	0.01	10*	200.7
Cadmium (Cd)	ND	0.01	10*	200.7
Chromium (Cr)	ND	0.01	10*	200.7
Cobalt (Co)	1.61	0.02	10*	200.7
Copper (Cu)	ND	0.02	10*	200.7
Lead (Pb)	ND	0.01	10*	200.7
Mercury (Hg)	ND	0.0005	1	245.1
Molybdenum (Mo)	ND	0.1	10*	200.7
Nickel (Ni)	ND	0.05	10*	200.7
Selenium (Se)	ND	0.02	10*	200.7
Silver (Ag)	ND	0.02	10*	200.7
Thallium (Tl)	ND	0.02	10*	200.7
Vanadium (V)	ND	0.1	10*	200.7
Zinc (Zn)	ND	0.01	10*	200.7

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection limit or non-detected
* = Actual Detection Limit raised due to matrix interference

Data Reviewed and Approved by: 
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

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Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: **TiCoat UV-A and V Test**
MATRIX: LIQUID DATE RECEIVED: 11/02/20
SAMPLING DATE: _____ DATE ANALYZED: 11/03/20
REPORT TO: MR. TODD HODRINSKY DATE REPORTED: 11/13/20

SAMPLE I.D.: **UV-A and Binder** LAB I.D.: 201102-17

TOTAL METALS ANALYSIS

UNIT: mg/L = MILLIGRAM PER LITER = PPM

ELEMENT ANALYZED	SAMPLE RESULT	PQL	DF	EPA METHOD
Antimony (Sb)	ND	0.02	10*	200.7
Arsenic (As)	0.255	0.01	10*	200.7
Barium (Ba)	ND	0.10	10*	200.7
Beryllium (Be)	ND	0.01	10*	200.7
Cadmium (Cd)	ND	0.01	10*	200.7
Chromium (Cr)	ND	0.01	10*	200.7
Cobalt (Co)	ND	0.02	10*	200.7
Copper (Cu)	ND	0.02	10*	200.7
Lead (Pb)	ND	0.01	10*	200.7
Mercury (Hg)	ND	0.0005	1	245.1
Molybdenum (Mo)	ND	0.1	10*	200.7
Nickel (Ni)	ND	0.05	10*	200.7
Selenium (Se)	ND	0.02	10*	200.7
Silver (Ag)	ND	0.02	10*	200.7
Thallium (Tl)	ND	0.02	10*	200.7
Vanadium (V)	ND	0.1	10*	200.7
Zinc (Zn)	ND	0.01	10*	200.7

COMMENTS

DF = Dilution Factor
PQL = Practical Quantitation Limit
Actual Detection Limit = PQL X DF
ND = Below the Actual Detection limit or non-detected
* = Actual Detection Limit raised due to matrix interference

Data Reviewed and Approved by: _____
CAL-DHS ELAP CERTIFICATE No.: 1555

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LABORATORY REPORT

CUSTOMER: TiCoat USA
417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: TiCoat UV-A and V Test
MATRIX: LIQUID DATE RECEIVED: 11/02/20
SAMPLING DATE: DATE ANALYZED: 11/03/20
REPORT TO: MR. TODD HODRINSKY DATE REPORTED: 11/13/20

SAMPLE I.D.: V Type Coating LAB I.D.: 201102-16

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: ug/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL XI. Lists various chemical compounds and their results (e.g., ACETONE 19.1, BENZENE ND).

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: [Signature]

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

CUSTOMER: TiCoat USA
417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: TiCoat UV-A and V Test
MATRIX: LIQUID DATE RECEIVED: 11/02/20
SAMPLING DATE: DATE ANALYZED: 11/03/20
REPORT TO: MR. TODD HODRINSKY DATE REPORTED: 11/13/20

SAMPLE I.D.: UV-A and Binder LAB I.D.: 201102-17

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 1 OF 2
UNIT: ug/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, and PQL X50*. Lists various chemical compounds and their corresponding results (ND) and PQL values.

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: [Signature]

Enviro - Chem, Inc.

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LABORATORY REPORT

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PROJECT: TiCoat UV-A and V Test
MATRIX: LIQUID DATE RECEIVED: 11/02/20
SAMPLING DATE: DATE ANALYZED: 11/03/20
REPORT TO: MR. TODD HODRINSKY DATE REPORTED: 11/13/20

SAMPLE I.D.: UV-A and Binder LAB I.D.: 201102-17

ANALYSIS: VOLATILE ORGANICS, EPA METHOD 5030B/8260B, PAGE 2 OF 2
UNIT: ug/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X50*. Lists various chemical compounds and their detection results (ND) and practical quantitation limits (PQL).

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

* = PQL RAISED DUE TO MATRIX INTERFERENCE

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555

Enviro - Chem, Inc.

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LABORATORY REPORT

CUSTOMER: TiCoat USA
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Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: TiCoat UV-A and V Test

MATRIX: LIQUID
SAMPLING DATE:
REPORT TO: MR. TODD HODRINSKY

DATE RECEIVED: 11/02/20
DATE EXTRACTED: 11/02/20
DATE ANALYZED: 11/03/20
DATE REPORTED: 11/13/20

SAMPLE I.D.: V Type Coating

LAB I.D.: 201102-16

ANALYSIS: SEMI-VOLATILE ORGANICS, EPA METHOD 8270C, PAGE 1 OF 2
UNIT: ug/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their results (mostly ND) and PQL values (mostly 10, some 50).

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: [Signature]

Enviro - Chem, Inc.

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LABORATORY REPORT

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Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: TiCoat UV-A and V Test

MATRIX: LIQUID
SAMPLING DATE:
REPORT TO: MR. TODD HODRINSKY

DATE RECEIVED: 11/02/20
DATE EXTRACTED: 11/02/20
DATE ANALYZED: 11/03/20
DATE REPORTED: 11/13/20

SAMPLE I.D.: V Type Coating

LAB I.D.: 201102-16

ANALYSIS: SEMI-VOLATILE ORGANICS, EPA METHOD 8270C, PAGE 2 OF 2
UNIT: uG/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their results (mostly ND) and PQL values (mostly 10).

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555

Handwritten signature and line

Enviro - Chem, Inc.

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LABORATORY REPORT

CUSTOMER: TiCoat USA
417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: TiCoat UV-A and V Test

MATRIX: LIQUID
SAMPLING DATE:
REPORT TO: MR. TODD HODRINSKY

DATE RECEIVED: 11/02/20
DATE EXTRACTED: 11/02/20
DATE ANALYZED: 11/03/20
DATE REPORTED: 11/13/20

SAMPLE I.D.: UV-A and Binder

LAB I.D.: 201102-17

ANALYSIS: SEMI-VOLATILE ORGANICS, EPA METHOD 8270C, PAGE 1 OF 2
UNIT: ug/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL XI. Lists various chemical compounds and their results (mostly ND) and PQL values (10 or 50).

----- TO BE CONTINUED ON PAGE #2 -----

DATA REVIEWED AND APPROVED BY: [Signature]

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

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417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: TiCoat UV-A and V Test

MATRIX: LIQUID
SAMPLING DATE:
REPORT TO: MR. TODD HODRINSKY

DATE RECEIVED: 11/02/20
DATE EXTRACTED: 11/02/20
DATE ANALYZED: 11/03/20
DATE REPORTED: 11/13/20

SAMPLE I.D.: UV-A and Binder

LAB I.D.: 201102-17

ANALYSIS: SEMI-VOLATILE ORGANICS, EPA METHOD 8270C, PAGE 2 OF 2
UNIT: uG/L = MICROGRAM PER LITER = PPB

Table with 3 columns: PARAMETER, SAMPLE RESULT, PQL X1. Lists various chemical compounds and their detection results (ND) and practical quantitation limits (PQL).

COMMENTS PQL = PRACTICAL QUANTITATION LIMIT

ND = NON-DETECTED OR BELOW THE PQL

DATA REVIEWED AND APPROVED BY:

CAL-DHS CERTIFICATE # 1555

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LABORATORY REPORT

CUSTOMER: **TiCoat USA**
417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: **TiCoat UV-A and V Test**

MATRIX: LIQUID

DATE RECEIVED: 11/02/20

SAMPLING DATE: _____

DATE ANALYZED: 11/05-09/20

REPORT TO: MR. TODD HODRINSKY

DATE REPORTED: 11/13/20

SAMPLE I.D.: **V Type Coating**

LAB I.D.: 201102-16

AQUATIC TOXICITY TESTING

METHOD: STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME APPROVED
PROCEDURES USING PIMEPHALES PROMELAS (FATHEAD MINNONS)

RESULTS: **0% MORTALITY** RATE AT 750 mg/L CONCENTRATION
(100% SURVIVAL)

0% MORTALITY RATE AT 400 mg/L CONCENTRATION
(100% SURVIVAL)

THEREFORE, LC-50 > 750 mg/L

COMMENTS

mg/L = MILLIGRAM PER LITER = PPM

> = GREATER THAN

ANALYSIS WAS PERFORMED BY ENTHALPY NAUTILUS, SAN DIEGO, CA

DATA REVIEWED AND APPROVED BY: 
ENVIRO-CHEM'S CAL-DHS ELAP CERTIFICATE No.: 1555

Enviro - Chem, Inc.

1214 E. Lexington Avenue, Pomona, CA 91766 Tel (909) 590-5905 Fax (909) 590-5907

LABORATORY REPORT

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417 Mulberry Road, Mansfield Center, CT 06250
Tel: (860) 634-1790 E-Mail: Todd.Hodrinsky@LiteSheet.com

PROJECT: **TiCoat UV-A and V Test**

MATRIX: LIQUID

DATE RECEIVED: 11/02/20

SAMPLING DATE: _____

DATE ANALYZED: 11/05-09/20

REPORT TO: MR. TODD HODRINSKY

DATE REPORTED: 11/13/20

SAMPLE I.D.: **UV-A and Binder**

LAB I.D.: 201102-17

AQUATIC TOXICITY TESTING

METHOD: STATE OF CALIFORNIA DEPARTMENT OF FISH AND GAME APPROVED
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RESULTS: **0% MORTALITY** RATE AT 750 mg/L CONCENTRATION
(100% SURVIVAL)

0% MORTALITY RATE AT 400 mg/L CONCENTRATION
(100% SURVIVAL)

THEREFORE, LC-50 > 750 mg/L

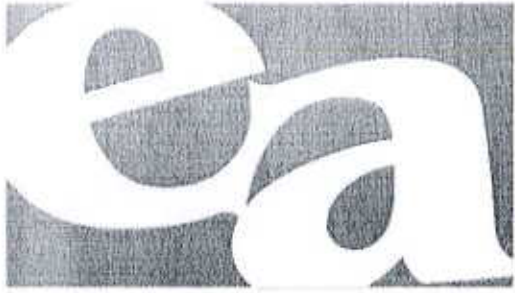
COMMENTS

mg/L = MILLIGRAM PER LITER = PPM

> = GREATER THAN

ANALYSIS WAS PERFORMED BY ENTHALPY NAUTILUS, SAN DIEGO, CA

DATA REVIEWED AND APPROVED BY: 
ENVIRO-CHEM'S CAL-DHS ELAP CERTIFICATE No.: 1555



ENTHALPY
ANALYTICAL

Enthalpy Analytical
931 West Barkley Ave
Orange, CA 92868
(714) 771-6900

enthalpy.com

Lab Job Number: 435721
Report Level: II
Report Date: 11/12/2020

Analytical Report *prepared for:*

Curtis Desilets
Enviro-Chem Inc.
1214 E. Lexington Avenue
Pomona, CA 91766

Location: Ti Coat UV-A and V Test (201102-16~17)

Authorized for release by:

Ranjit K Clarke, Project Manager
(714) 771-9906
Ranjit.Clarke@enthalpy.com

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the above signature which applies to this PDF file as well as any associated electronic data deliverable files. The results contained in this report meet all requirements of NELAP and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

CA ELAP# 1338, NELAP# 4038, SCAQMD LAP# 18LA0518, LACSD ID# 10105, CDC ELITE
Member

Sample Summary

Curtis Desilets	Lab Job #:	435721
Enviro-Chem Inc.	Location:	Ti Coat UV-A and V Test (201102-16~17)
1214 E. Lexington Avenue	Date Received:	11/02/20
Pomona, CA 91766		

Sample ID	Lab ID	Collected	Matrix
V TYPE COATING (201102-16)	435721-001	11/02/20 00:00	Miscell. (Liquid)
UV-A AND BINDER (201102-17)	435721-002	11/02/20 00:00	Miscell. (Liquid)

Case Narrative

Enviro-Chem Inc.
1214 E. Lexington Avenue
Pomona, CA 91766
Curtis Desilets

Lab Job Number: 435721
Location: Ti Coat UV-A and V Test (201102-16~17)
Date Received: 11/02/20

This data package contains sample and QC results for two liquid samples, requested for the above referenced project on 11/02/20. The samples were received cold and intact.

Fish Bioassay (CDFG P&M 1988):

CDFG P&M 1988 analysis performed by Enthalpy Nautilus in San Diego (CA ELAP #1802). LC50 > 750 mg/L = Non Hazardous. No analytical problems were encountered.



ENTHALPY ANALYTICAL

SAMPLE ACCEPTANCE CHECKLIST

Section 1
 Client: Enviro-Chem Project: _____
 Date Received: 11/2/20 Sampler's Name Present: Yes No

Section 2
 Sample(s) received in a cooler? Yes, How many? 1 No (skip section 2) Sample Temp (°C) (No Cooler) : _____
 Sample Temp (°C), One from each cooler: #1: 8.7 #2: _____ #3: _____ #4: _____
(Acceptance range is < 6°C but not frozen for Microbiology samples, acceptance range is < 10°C but not frozen). It is acceptable for samples collected the same day as sample receipt to have a higher temperature as long as there is evidence that cooling has begun.)
 Shipping Information: _____

Section 3
 Was the cooler packed with: Ice Ice Packs Bubble Wrap Styrofoam
 Paper None Other _____
 Cooler Temp (°C): #1: 0.0 #2: _____ #3: _____ #4: _____

Section 4	YES	NO	N/A
Was a COC received?	✓		
Are sample IDs present?	✓		
Are sampling dates & times present?	✓		
Is a relinquished signature present?	✓		
Are the tests required clearly indicated on the COC?	✓		
Are custody seals present?		✓	
If custody seals are present, were they intact?			✓
Are all samples sealed in plastic bags? (Recommended for Microbiology samples)			✓
Did all samples arrive intact? If no, indicate in Section 4 below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were the samples collected in the correct containers for the required tests?	✓		
Are the containers labeled with the correct preservatives?			✓
Is there headspace in the VOA vials greater than 5-6 mm in diameter?			✓
Was a sufficient amount of sample submitted for the requested tests?	✓		

Section 5 Explanations/Comments

Section 6
 For discrepancies, how was the Project Manager notified? Verbal PM Initials: _____ Date/Time _____
 Email (email sent to/on): _____ / _____
 Project Manager's response:

Completed By: Amel Camel Date: 11/2/20

revision on the COC for fish sent in yesterday

1 message

Jessica Lin <sub.envirocheminc@gmail.com>


Tue, Nov 3, 2020 at 9:04 AM

To: Ranjit Clarke <ranjit.clarke@enthalpy.com>

Hi Ranjit,

I was waiting for a COC from the client when the sample was picked up yesterday
Please see the updated info attached

Thanks
Jessica

 **Revised COC.pdf**
119K

Analysis Results for 435721

Curtis Desilets
 Enviro-Chem Inc.
 1214 E. Lexington Avenue
 Pomona, CA 91766

Lab Job #: 435721
 Location: Ti Coat UV-A and V Test (201102-16~17)
 Date Received: 11/02/20

Sample ID: V TYPE COATING (201102-16)	Lab ID: 435721-001 Matrix: Miscell.	Collected: 11/02/20
---	--	----------------------------

435721-001 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: CDFG P&M 1988									
LC50	>750		mg/L	1.0	1	255999	11/05/20	11/09/20	EN

Sample ID: UV-A AND BINDER (201102-17)	Lab ID: 435721-002 Matrix: Miscell.	Collected: 11/02/20
--	--	----------------------------

435721-002 Analyte	Result	Qual	Units	RL	DF	Batch	Prepared	Analyzed	Chemist
Method: CDFG P&M 1988									
LC50	>750		mg/L	1.0	1	255999	11/05/20	11/09/20	EN

> Value exceeds indicated concentration

Client: Enthalpy Orange

Test Species: P. promelas

Test Nos.: 2011-5078 to 5090

Start Date/Time: 11/5/2020 1400

End Date/Time: 11/9/2020 1350

Sample ID	Rep	Number of Live Organisms			Conductivity (umhos/cm)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (units)			Percent Survival									
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96										
Lab Control	A	10	10	10	10	160	174	186	203	205	19.4	18.7	18.8	18.8	18.7	19.0	9.3	9.9	8.9	9.0	7.7	7.50	7.63	7.55	7.71	100
#1	B	10	10	10	10	160	171	178	185	192	17.7	18.3	18.4	18.4	18.9	8.9	9.3	8.7	8.0	8.3	7.7	7.58	7.58	7.54	7.64	100
Tech Initials:	Counts	JA TN NM #1			DM			Recorded in Log Pass/Fail:																		
	Readings	NM TN NM #1			DM																					
	QC	NM			NM																					

Fish size at test initiation^b:

Concentration	Alkalinity ^a		Hardness ^a	
	Init.	Fin.	Init.	Fin.
Control	24	38	43	48

Weights (g): 0.403 0.398 0.465 0.396 0.363 0.413 0.373 0.382 0.465 0.402 Mean (g) = 0.403

Lengths (mm): 72.0 72.0 73.0 73.0 73.0 73.0 73.0 73.0 74.0 74.0 Mean (mm) = 73.0

Initials and Date: NM 11/5/20 Length min/max (mm) = 30.0/34.0
Loading rate (g/L)^c = 0.807

Animal Source/Date Received: Thomas Fish Co / 11/4/2020

Age at Initiation: Juvenile

Environmental Chamber: T-22 Room

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / none

Comments: ^b10 random fish are sacrificed at initiation for size determination. The largest fish should weigh no more than 1.5X the smallest fish.

^c Loading rate should not exceed 1.0 g/L Q21 > 30 shift in acclimation. NM 11/5/20

QC Check: ATS 11/4/2020

Final Review: EA 11/10/20

Enthalpy Analytical, 4340 Vandever Avenue, San Diego, CA 92120.

Freshwater Acute Bioassay
Static Conditions
DF-01E

Hazardous Waste Characterization

Water Quality Measurements
& Test Organism Survival

Client: Enthalpy Orange

Test Species: P. promelas

Test No.: Q21-5078 to 5080

Start Date/Time: 11/5/2020 1400

Sample Log-in #: 20-5229, 20-5230, 20-5231

End Date/Time: 11/9/2020 1350

Lab ID	Rep and Concentration (mg/L)	Number of Live Organisms			Conductivity (umhos/cm)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (units)			Percent Survival										
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96											
435710-001	400 A	10	10	10	10	10	160	170	174	179	181	20.4	18.6	18.8	20.2	19.9	8.8	9.1	9.0	8.2	8.7	7.76	7.68	7.74	7.66	7.73	100
	400 B	10	10	10	10	10	160	171	175	179	180	20.2	18.5	18.6	20.4	20.4	8.8	9.2	9.0	8.1	8.6	7.77	7.68	7.76	7.67	7.75	100
	750 A	10	10	10	10	10	161	174	179	182	182	20.4	18.6	18.7	19.3	19.3	8.8	9.1	9.0	8.5	8.9	7.77	7.69	7.77	7.71	7.75	100
	750 B	10	10	10	10	10	161	174	177	179	180	20.5	18.6	18.8	20.3	19.9	8.8	9.1	9.0	8.3	8.7	7.77	7.68	7.77	7.71	7.75	100
435719-001	400 A	10	10	10	10	10	162	173	176	179	180	20.2	18.9	19.2	21.3	21.1	8.8	9.0	8.9	8.0	8.3	7.75	7.68	7.65	7.70	7.74	100
	400 B	10	10	10	10	10	162	173	179	180	184	20.3	19.2	19.3	19.6	19.7	8.8	8.7	8.8	8.3	8.5	7.74	7.68	7.66	7.69	7.74	100
	750 A	10	10	10	10	10	165	171	170	172	172	20.9	20.1	20.4	20.3	20.5	8.7	8.7	8.6	8.3	8.3	7.74	7.68	7.70	7.73	7.73	100
	750 B	10	10	10	10	10	165	173	179	175	177	20.9	19.4	19.7	20.3	20.7	8.7	8.8	8.7	8.3	8.3	7.75	7.67	7.75	7.72	7.72	100
435720-001	400 A	10	10	10	10	10	160	167	167	169	169	21.1	19.7	20.1	21.2	21.0	8.7	8.5	8.3	7.9	8.0	7.70	7.56	7.54	7.59	7.66	100
	400 B	10	10	10	10	10	160	167	168	169	170	20.8	19.4	19.6	20.8	20.9	8.7	8.8	8.7	8.3	8.3	7.72	7.62	7.67	7.65	7.68	100
	750 A	10	10	10	10	10	161	169	171	171	171	20.7	19.3	19.5	20.9	21.0	8.7	8.7	8.6	8.2	8.4	7.74	7.59	7.63	7.64	7.69	100
	750 B	10	10	10	10	10	161	169	170	172	175	20.8	19.7	20.0	20.3	20.2	8.7	8.7	8.6	8.4	8.5	7.74	7.60	7.65	7.67	7.72	100
Tech Initials:	Counts	JA			TN			NM			MS			DN													
	Readings	NM			TN			NM			MS			DN													
	QC	NM			NM			MS			DN																

Concentration	Alkalinity ¹ Hardness ²	
	Init.	Fin.
435710-001 750 mg/L	24	30
435719-001 750 mg/L	28	29
435720-001 750 mg/L	28	30

¹(mg/L as CaCO₃)

Environmental Chamber: T-22 Room

Animal Source/Date Received: Thomas Fish Co / 11/4/2020

Age at Initiation: Juvenile

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / none

Comments: Q21: 7.3°C change in 5.24 hrs during acclimation MS 11/9/2020

QC Check: MS 11/9/2020
Enthalpy Analytical, 4340 Vandever Avenue, San Diego, CA 92120.

Final Review: EC 11/10/20

Client: Enthalpy Orange

Test Species: P. promelas

Test No.: 2011-5081 to 5083

Start Date/Time: 11/5/2020 1400

Sample Log-in #: 20-5232, 20-5233, 20-5234

End Date/Time: 11/9/2020 1350

Lab ID	Rep and Concentration (mg/L)	Number of Live Organisms			Conductivity (umhos/cm)			Temperature (°C)			Dissolved Oxygen (mg/L)			pH (units)			Percent Survival										
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96											
435721-001	400 A	10	10	10	10	10	159	169	171	173	174	20.3	18.7	20.2	21.6	20.4	8.8	9.0	8.9	8.1	7.69	7.58	7.72	7.68	7.74	100	
	400 B	10	10	10	10	10	159	168	170	173	173	20.5	18.7	19.2	20.9	21.1	8.8	9.0	8.9	8.1	7.70	7.60	7.74	7.73	7.76	100	
	750 A	10	10	10	10	10	159	168	167	172	172	20.7	18.9	19.4	21.4	21.5	8.7	9.0	8.8	8.1	7.70	7.63	7.75	7.75	7.76	100	
	750 B	10	10	10	10	10	159	169	171	173	174	20.2	18.7	19.2	21.5	21.2	8.8	8.98	8.7	7.9	7.70	7.60	7.70	7.65	7.72	100	
	400 A	10	10	10	10	10	159	169	172	173	177	20.4	18.9	19.4	20.6	20.0	8.8	9.0	8.9	8.4	7.70	7.64	7.70	7.63	7.74	100	
435721-002	400 E	10	10	10	10	10	159	170	174	182	186	20.2	18.9	19.3	19.6	19.4	8.8	9.0	8.9	8.7	7.74	7.60	7.73	7.74	7.75	100	
	750 A	10	10	10	10	10	159	171	175	178	180	20.2	18.7	19.1	21.2	20.2	8.8	9.0	8.8	8.1	7.75	7.64	7.75	7.70	7.73	100	
	750 B	10	10	10	10	10	159	171	175	179	180	19.8	18.5	19.0	21.2	20.5	8.8	9.0	8.9	8.1	7.75	7.68	7.73	7.74	7.76	100	
	400 A	10	10	10	10	10	167	182	189	196	199	19.5	18.3	18.6	19.9	21.5	8.8	8.9	8.9	8.3	7.73	7.64	7.65	7.61	7.71	100	
	400 B	10	10	10	10	10	169	185	193	201	209	19.4	18.1	18.3	19.5	20.7	8.7	9.0	9.0	8.1	7.72	7.68	7.74	7.72	7.74	100	
435722-001	750 A	10	10	10	10	10	177	203	218	233	218	19.2	17.8	18.0	20.5	20.9	8.8	9.2	9.0	8.1	7.70	7.70	7.85	7.83	7.84	100	
	750 B	10	10	10	10	10	177	201	218	235	245	18.9	17.9	18.3	19.3	20.4	8.8	9.0	8.9	8.1	7.72	7.77	7.80	7.82	7.85	100	
	Counts		NM	TN	NA	NS	DN																				
Tech Initials:	Readings		NM	TN	NA	NS	DN																				
QC			TN																								

Concentration	Alkalinity*		Hardness*	
	Init.	Fin.	Init.	Fin.
435721-001 750 mg/L	26	31	49	41
435721-002 750 mg/L	20	30	49	41
435722-001 750 mg/L	28	50	47	60

Sample Description:	Sample Description:	Sample Description:
435721-001	435721-002	435722-001
White liquid	Yellow liquid	Brown sediment with plant debris

*(mg/L as CaCO₃)

Animal Source/Date Received: Thomas Fish Co / 11/14/2020

Age at Initiation: Juvenile

Environmental Chamber: T-22 Room

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / none

Comments: 5.2 hrs > 3°C change in < 24 hrs during acclimation AFS 11/9/2020

QC Check: ACJ 11/9/2020
Enthalpy Analytical, 4340 Vandever Avenue, San Diego, CA 92120.

Final Review: EA 11/10/20

Freshwater Acute Bioassay
Static Conditions

Hazardous Waste Characterization

Water Quality Measurements
& Test Organism Survival

DF-018

Client: Enthalpy Orange

Test Species: *P. promelas*

Test No.: 2011-5084 to 5086

Start Date/Time: 11/5/2020 1400

Sample Log-in #: 20-5235, 20-5236, 20-5239

End Date/Time: 11/9/2020 1350

Lab ID	Rep and Concentration (mg/L)	Number of Live Organisms					Conductivity (umhos/cm)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival	
		0 24 48 72 96					0 24 48 72 96					0 24 48 72 96					0 24 48 72 96											
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96		
435722-002	400 A	10	10	10	10	10	169	179	181	186	188	21.1	20.4	20.7	20.9	20.9	8.5	8.2	8.2	7.5	7.8	7.68	7.57	7.44	7.42	7.65	100	
	400 B	10	10	10	10	10	169	179	183	190	192	21.3	20.4	20.8	20.9	20.9	8.5	8.5	8.4	7.5	8.0	7.67	7.59	7.67	7.52	7.70	100	
	750 A	10	10	10	10	10	177	190	196	204	209	21.4	20.9	20.3	21.2	21.4	8.4	8.5	8.1	7.5	7.7	7.64	7.58	7.65	7.55	7.71	100	
	750 B	10	10	10	10	10	178	192	200	210	215	21.3	20.4	21.1	20.8	21.3	8.4	8.3	8.1	7.6	7.8	7.62	7.58	7.64	7.59	7.72	100	
	400 A	10	10	10	10	10	162	170	171	173	175	21.2	20.4	20.4	21.3	21.3	8.6	8.5	8.4	7.9	7.8	7.63	7.60	7.61	7.64	7.78	100	
435722-003	400 B	10	10	10	10	10	164	173	176	190	181	21.3	20.2	20.3	21.1	21.5	8.5	8.3	8.0	7.3	7.8	7.64	7.58	7.53	7.66	7.71	100	
	750 A	10	10	10	10	10	172	184	191	200	206	21.1	20.0	20.1	20.6	20.6	8.4	8.3	8.0	7.8	8.0	7.64	7.58	7.60	7.59	7.69	100	
	750 B	10	10	10	10	10	168	177	179	193	185	21.1	20.0	20.8	20.9	20.8	8.5	8.4	8.2	7.9	8.0	7.67	7.60	7.65	7.63	7.75	100	
	400 A	10	10	10	10	10	160	166	167	168	169	21.1	19.8	20.0	20.5	20.5	8.6	8.5	8.4	7.9	7.8	7.70	7.58	7.61	7.55	7.72	100	
	400 B	10	10	10	10	10	160	166	166	167	167	21.1	19.8	20.9	21.4	21.4	8.6	8.4	8.4	7.9	7.3	7.71	7.57	7.61	7.55	7.62	100	
435725-002	750 A	10	10	10	10	10	160	167	169	170	171	21.1	19.6	19.2	21.1	21.4	8.6	8.5	8.6	7.7	7.8	7.74	7.58	7.64	7.55	7.62	100	
	750 B	10	10	10	10	10	160	168	170	172	173	21.0	18.9	18.6	21.2	21.4	8.6	8.5	8.6	7.7	7.6	7.76	7.57	7.63	7.51	7.61	100	
	Counts		NM	TN	NM	43	DN																					
	Readings		NM	TN	NM	43	DN																					
	QC		TN																									

Alkalinity ³ Hardness ³	Init.	Fin.	Init.	Fin.
Concentration	27	40	53	57
435722-002 750 mg/L				
435722-003 750 mg/L	28	41	51	50
435725-002 750 mg/L	27	32	48	45
(mg/L as CaCO ₃)	25	48		

Concentration	Sample Description:	
	435722-002	Plant debris brown sediment
	435722-003	Fine brown sediment plant debris
435725-002	Light brown liquid	

Animal Source/Date Received: Thomas Fish Co / 11/14/2020
 Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / none
 Age at Initiation: Juvenile

Environmental Chamber: T-22 Room

Comments: A Q18 JA 11/8/20 Q18 DM 11/9/20 Q18 HI 11/9/20
Q21: >20°C change in 24 hrs during acclimation AS 11/9/20

QC Check: AS 11/9/2020
 Enthalpy Analytical, 4340 Vandever Avenue, San Diego, CA 92120

Final Review: EG 11/10/20

Freshwater Acute Bioassay
Static Conditions
DF-018

Hazardous Waste Characterization

Water Quality Measurements
& Test Organism Survival

Client: Enthalpy Orange

Test Species: *P. promelas*

Test No.: 2011-5087 to 5089

Start Date/Time: 11/5/2020 1400

Sample Log-in #: 20-5240, 20-5241, 20-5242

End Date/Time: 11/9/2020 1520

Lab ID	Rep and Concentration (mg/L)	Number of Live Organisms				Conductivity (umhos/cm)				Temperature (°C)				Dissolved Oxygen (mg/L)				pH (units)				Percent Survival			
		0		10		24		48		72		96		0		24		48		72			96		
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96				
435725-004	400 A	10	10	10	10	142	150	152	154	157	186	191	188	181	204	8.8	8.7	8.7	7.9	8.2	7.6	7.59	7.64	100	
	400 B	10	10	10	10	142	151	154	156	157	185	184	185	205	211	8.9	8.7	8.7	7.7	8.0	7.58	7.57	7.63	100	
	750 A	10	10	10	10	142	152	157	161	162	183	184	183	203	211	8.9	8.9	8.8	8.1	8.0	7.71	7.58	7.64	100	
	750 B	10	10	10	10	142	152	156	161	162	186	187	187	203	211	8.8	8.8	8.7	8.2	8.3	7.71	7.56	7.62	7.59	100
435726-001	400 A	10	10	10	10	141	148	148	150	152	185	185	205	210	210	8.9	8.5	8.4	8.4	8.3	7.63	7.60	7.58	7.67	100
	400 B	10	10	10	10	141	147	148	149	150	182	182	204	213	213	8.9	8.6	8.5	7.9	8.2	7.65	7.61	7.67	100	
	750 A	10	10	10	10	141	148	149	150	151	187	187	204	213	213	9.0	8.7	8.6	7.9	8.0	7.66	7.60	7.63	7.61	100
	750 B	10	10	10	10	141	149	150	153	154	185	185	207	210	210	9.0	8.8	8.7	8.1	8.2	7.67	7.61	7.65	7.69	100
435733-001	400 A	10	10	10	10	143	153	155	157	158	188	188	207	211	211	9.0	9.0	8.8	8.1	8.2	7.78	7.68	7.67	7.65	100
	400 B	10	10	10	10	144	152	154	156	158	191	192	201	213	213	9.0	8.9	8.7	8.1	8.3	7.81	7.66	7.67	7.72	100
	750 A	10	10	10	10	145	154	155	156	156	192	192	206	215	214	9.0	8.7	8.5	7.9	8.0	8.00	7.65	7.63	7.63	100
	750 B	10	10	10	10	145	155	156	157	158	193	193	208	209	212	9.0	8.7	8.5	8.1	8.2	8.01	7.65	7.68	7.66	7.62
Tech Initials:	Counts	JA	TN	NM	AK																				
	Readings	NM	TN	NM	AK																				
	QC	NM																							

Concentration	Alkalinity ^a		Hardness ^a	
	Init.	Fin.	Init.	Fin.
435725-004 750 mg/L	27	28	48	46
435726-001 750 mg/L	25	26	47	44
435733-001 750 mg/L	28	27	47	43

^a(mg/L as CaCO₃)

Sample Description:	Sample Description:
435725-004	Dark muddy liquid
435726-001	Clear liquid
435733-001	Black liquid

Animal Source/Date Received: Thomas Fish Co / 11/4/2020

Age at Initiation: Juvenile

Environmental Chamber: T-22 Room

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / none

Comments: Q22: 2.3°C change in 24 hrs during acclimation. ACS 11/9/20

QC Check: ACS 11/9/2020
Enthalpy Analytical, 4340 Vandever Avenue, San Diego, CA 92120.

Final Review: EA 11/10/20

Client: Enthalpy Orange

Test No.: 2011-5090

Sample Log-in #: 20-5243

Test Species: P. promelas

Start Date/Time: 11/5/2020 1400

End Date/Time: 11/9/2020 1350

Lab ID	Rep and Concentration (mg/L)	Number of Live Organisms					Conductivity (umhos/cm)					Temperature (°C)					Dissolved Oxygen (mg/L)					pH (units)					Percent Survival
		0 24 48 72 96					0 24 48 72 96					0 24 48 72 96					0 24 48 72 96										
		0	24	48	72	96	0	24	48	72	96	0	24	48	72	96	0	24	48	72	96						
435750-001	400 A	10	10	10	10	10	141	148	150	152	154	20.1	20.1	20.1	20.0	21.2	8.9	8.8	8.8	8.8	8.3	7.78	7.66	7.64	7.52	7.67	100
	400 B	10	10	10	10	10	141	148	148	149	149	20.0	20.0	20.0	20.0	21.1	8.9	8.8	8.7	8.7	8.3	7.76	7.66	7.68	7.58	7.70	100
	750 A	10	10	10	10	10	142	149	150	151	151	19.7	19.3	19.9	20.9	20.9	9.0	8.8	8.7	8.7	8.2	7.80	7.63	7.63	7.57	7.68	100
	750 B	10	10	10	10	10	142	149	150	151	152	19.7	19.3	20.0	20.2	21.1	9.0	8.8	8.6	8.2	8.2	7.79	7.60	7.64	7.61	7.66	100
Tech Initials:	Counts	JA TN NM PYS DM																									
	Readings	NM TN NM A1 DM																									
	QC	NM																									

Concentration	Alkalinity*		Hardness*	
	Init.	F.in.	Init.	F.in.
435750-001 750 mg/L	25	30	48	46

* (mg/L as CaCO₃)

435750-001 Sample Description: Clear liquid

Animal Source/Date Received: Thomas Fish Co / 11/4/2020 Age at Initiation: Juvenile

Animal Acclimation Qualifiers (circle all that apply): Q22 / Q23 / none

Environmental Chamber: T-22 Room

Comments: Q21. >3°C change in <24 hrs during acclimation. PYS 11/9/2020

QC Check: PYS 11/9/2020 Final Review: EG 11/10/20



ENTHALPY

ANALYTICAL

Enthalpy Analytical - Orange
 Orange, CA 92868
 (714) 771-6900 / Fax: (510) 486-0532

Subcontract Laboratory:

Enthalpy Nautilus
 4340 Vandever Ave.
 San Diego, CA 92120
 ATTN: Eric Green
 PO #: Required, to be sent via email

Enthalpy Order: EO-435721

PM: Ranjit K Clarke
 Email: Ranjit.Clarke@enthalpy.com
 CC: incomingreports@enthalpy.com
 Phone: (714) 771-9906

Results Due: Standard TAT

Report Level: II

Report To: RL

EDDs:

Notes:

Sample ID	Collected	Lab ID	# Cont.	Matrix	Analysis Requested	Comment
TICOAT V (201102-16)	02-NOV-2020 00:00	435721-001	1	Miscell.	Bioassay Hazardous Waste, Juvenile	NAUTILUS 10: 20-5232 WHITE LIQUID
TICOAT UV-A: TI COAT BINDER A/B; TI... (201102-17)	02-NOV-2020 00:00	435721-002	1	Miscell.	Bioassay Hazardous Waste, Juvenile	NAUTILUS 10: 20-5233 YELLOW LIQUID

Notes:	Relinquished By:	Received By:
	<i>Saul N</i>	<i>Cy M</i>
	Date: 11/3/20 1430	Date: 11/3/20 1430
	Date:	Date:
	Date:	Date:

Glossary of Qualifier Codes:

- Q1 - Temperatures out of recommended range; corrective action taken and recorded in Test Temperature Correction Log
- Q2 - Temperatures out of recommended range; no action taken, test terminated same day
- Q3 - Sample aerated prior to initiation or renewal due to dissolved oxygen (D.O.) levels below 6.0 mg/L
- Q4 - Test aerated; D.O. levels dropped below 4.0 mg/L
- Q5 - Test initiated with aeration due to an anticipated drop in D.O.
- Q6 - Airline obstructed or fell out of replicate and replaced; drop in D.O. occurred
- Q7 - Salinity out of recommended range
- Q8 - Spilled test chamber/ Unable to recover test organism(s)
- Q9 - Inadequate sample volume remaining, 50% renewal performed
- Q10 - Inadequate sample volume remaining, no renewal performed
- Q11 - Sample out of holding time; refer to QA section of report
- Q12 - Replicate(s) not initiated; excluded from data analysis
- Q13 - Survival counts not recorded due to poor visibility or heavy debris
- Q14 - D.O. percent saturation was checked and was $\leq 110\%$
- Q15 - Did not meet minimum test acceptability criteria. Refer to QA section of report.
- Q16 - Percent minimum significant difference (PMSD) was below the lower bound limit for acceptability. This indicates that statistics may be over-sensitive in detecting a difference from the control due to low variability in the data set.
- Q17 - Percent minimum significant difference (PMSD) was above the upper bound limit for acceptability. This indicates that statistics may be under-sensitive in detecting a difference from the control due to high variability in the data set.
- Q18 - Incorrect Entry
- Q19 - Illegible Entry
- Q20 - Miscalculation
- Q21 - Other (provide reason in comments section)
- Q22 - Greater than 10% mortality observed upon receipt and/or in holding prior to test initiation. Organisms acclimated to test conditions at Nautilus and ultimately deemed fit to use for testing.
- Q23 - Test organisms received at a temperature greater than 3°C outside the recommended test temperature range. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate tests upon the day of arrival. Organisms were acclimated to the appropriate test conditions upon receipt and prior to test initiation.
- Q24 - Test organisms received at salinity greater than 3 ppt outside of the recommended test salinity range. However, due to age-specific protocol requirements and/or sample holding time constraints, the organisms were used to initiate tests upon the day of arrival. Organisms were acclimated to the appropriate test conditions upon receipt and prior to test initiation.

Enviro-Chem, Inc. Laboratories
 1214 E. Lexington Avenue,
 Pomona, CA 91766
 Tel: (909) 590-5905 Fax: (909) 590-5907
CA-DHS ELAP CERTIFICATE # 1555

Turnaround Time
 Same Day
 24 Hours
 48 Hours
 72 Hours
 1 Week (Standard)
 Other: _____

SAMPLE ID	LAB ID	SAMPLING DATE	TIME	MATRIX	NO. OF CONTAINERS	TEMPERATURE	PRESERVATION	PH	Total Metals	VOL	SVC	Fish Bio	Misc.	COMMENTS
UV-A and Binder	(201102-17)			WA	1		None	X	X	X	X	X		
V Type Coating	201102-16			↓	1		↓	X	X	X	X	X		

Project Contact: **Todd Hodrinsky**
 Tel: 860-634-1790
 Fax: _____

Company Name: TICOAT USA
 Address: 417 Mulberry Rd.
 City/State/Zip: Mansfield Center, CT, 06250

Sampler's Signature: *Todd Hodrinsky*
 Project Name/ID: TiCoat UV-A and V Test

Received by: *[Signature]*
 Date & Time: 11/20/00

Relinquished by: _____
 Date & Time: _____

Relinquished by: _____
 Date & Time: _____

Instructions for Sample Storage After Analysis:
 Dispose of Return to Client Store (30 Days)
 Other

CHAIN OF CUSTODY RECORD

The Brooklyn School

119 Gorman Road
Brooklyn, CT 06234
Phone: (860) 774-9153
Fax: (860) 774-6938

Patricia L. Buell
Superintendent
buell@brooklynschools.org

December 14, 2020

Lebanon Lions Club
Mr. Jody Walsh - Club President
PO Box 13
Lebanon, CT 06249

Dear Mr. Walsh,

On behalf of the Brooklyn Public Schools I would like to thank the Lebanon Lions Club for the generous donation this year. Your support of the Brooklyn families is very thoughtful and greatly appreciated. The eleven (11) boxes of food that you donated to Brooklyn Public Schools will be distributed to our Brooklyn families in need.

As you know there are more people now than ever in need and it is a relief to those families who will benefit. I can't thank you enough!

This donation will be publicly acknowledged during the January 27, 2020 Board of Education meeting and I would like to assure you that we are grateful to you for thinking of the Brooklyn Public Schools.

Thank you again for your continued support of the Brooklyn Public Schools!

Sincerely,



Patricia L. Buell

cc: Keith Atchinson, Board of Education Secretary



The Brooklyn School

119 Gorman Road
Brooklyn, CT 06234
Phone: (860) 774-9732
Fax: (860) 774-6938

Patricia L. Buell
Superintendent
buell@brooklynschools.org

January 13, 2021

Beagary Charitable Trust
Patricia Morgan, Trustee
49 Westview Drive
Brooklyn, CT 06234

Dear Patricia A. Morgan and Board of Trustees,

On behalf of the Brooklyn Public Schools I would like to thank the Beagary Charitable Trust for your continued support of the Brooklyn Public Schools. Your kindness is overwhelming and there are so many who will appreciate and benefit from these donations made to the Brooklyn Public Schools. Thank you very much for your generosity!

Through this donation all students at Brooklyn Elementary and Middle Schools will benefit from the enhanced instructional materials, education and research.

We appreciate your continued support of the Brooklyn Public Schools! This donation was announced at the April 27th, 2021 Board of Education meeting. Thank you again for your generous donation. The Beagary Charitable Trust continues to impact students in our community and we are grateful.

Sincerely,


Patricia L. Buell

cc: Keith Atchinson, Brooklyn Board of Education Secretary

The Brooklyn School

119 Gorman Road
Brooklyn, CT 06234
Phone: (860) 774-9732
Fax: (860) 774-6938

Patricia L. Buell
Superintendent
buell@brooklynschools.org

January 19, 2021

Brooklyn Xtra Mart - Mr. Lee Rogers
% ExxonMobil Education Alliance
409 Providence Rd
Brooklyn, CT 06234

ExxonMobil Educational Alliance
P.O. Box 7288
Princeton, NJ 08543-7288

Dear Mr. Rogers and ExxonMobil Educational Alliance,

On behalf of the Brooklyn Public Schools I would like to thank you for the very generous \$500 grant from Brooklyn Xtra Mart on Providence Road. We are very pleased to accept this gift to be used for the maintenance and support of instruction in the areas of math, technology, and/or science! We have numerous STEM projects that we could support with this funding.

We appreciate your support of the Brooklyn Public Schools and our students!

This donation will be recognized at the Board of Education meeting held on January 27, 2021. Thank you again for your generous donation.

Sincerely,



Patricia L. Buell

PB/tm

cc: Keith Atchinson, Brooklyn Board of Education Secretary

Brooklyn Board of Education

Budget Expenditure Report

From Date: 1/1/2021

To Date: 1/31/2021

Fiscal Year: 2020-2021

Include pre encumbrance

Print accounts with zero balance

Filter Encumbrance Detail by Date Range

Exclude inactive accounts with zero balance

Account Number	Description	Budget	Adjustments	GL Budget	Current	YTD	Balance	Encumbrance	Budget Bal	% Rem
1010.01901.1000.100.51103	SALARY-TEACHER-SUBSTITUTE BES	\$57,000.00	\$0.00	\$57,000.00	\$454.93	\$2,413.89	\$54,586.11	\$0.00	\$54,586.11	95.77%
1010.01901.1000.100.51111	SALARY-TEACHER-ELEMENTAR Y	\$2,123,622.00	\$28,202.00	\$2,151,824.00	\$159,744.14	\$928,188.46	\$1,223,635.54	\$0.00	\$1,223,635.54	56.87%
1010.01901.1000.100.56100	GENERAL SUPPLIES-ELEMENTARY	\$6,662.00	\$0.00	\$6,662.00	\$0.00	\$1,648.82	\$5,013.18	\$60.00	\$4,953.18	74.35%
1010.01901.1000.100.56110	INSTRUCTIONAL SUPPLIES-ELEMENTARY	\$13,887.00	\$0.00	\$13,887.00	\$887.82	\$9,041.15	\$4,845.85	\$333.72	\$4,512.13	32.49%
1010.01901.1000.100.56400	CLASSROOM BOOKS-ELEMENTARY	\$5,500.00	\$0.00	\$5,500.00	\$0.00	\$2,405.66	\$3,094.34	\$0.00	\$3,094.34	56.26%
1010.01901.1000.100.56410	TEXTBOOKS-ELEMENTARY	\$16,251.00	\$0.00	\$16,251.00	\$860.05	\$1,593.50	\$14,657.50	\$6,955.00	\$7,702.50	47.40%
1010.01901.2130.100.51110	SALARY - SCHOOL NURSE-ELEMENTARY	\$56,595.00	\$14,264.43	\$70,859.43	\$5,492.95	\$54,738.50	\$16,120.93	\$0.00	\$16,120.93	22.75%
1010.01901.2130.100.51112	SALARY-PARA HEALTH-ELEMENTARY	\$17,810.00	\$0.00	\$17,810.00	\$0.00	\$0.00	\$17,810.00	\$0.00	\$17,810.00	100.00%
1010.01901.2130.100.53400	PROFESSIONAL SERVICES-HEALTH	\$500.00	\$0.00	\$500.00	\$3,000.00	\$3,250.00	(\$2,750.00)	\$0.00	(\$2,750.00)	-550.00%
1010.01901.2130.100.56100	SUPPLIES-HEALTH-ELEMENTAR Y	\$648.00	\$0.00	\$648.00	\$0.00	\$460.37	\$187.63	\$0.00	\$187.63	28.96%
1010.01901.2140.100.53400	PROFESSIONAL SERVICES-ASSESSMENTS-ELEM	\$3,000.00	\$0.00	\$3,000.00	\$2,250.00	\$2,278.16	\$721.84	\$0.00	\$721.84	24.06%
1010.01901.2213.100.53200	PROF ED SERVICES - ELEMENTARY	\$18,500.00	\$0.00	\$18,500.00	(\$201.69)	\$14,209.23	\$4,290.77	\$0.00	\$4,290.77	23.19%
1010.01901.2220.100.56100	LIBRARY SUPPLIES - ELEMENTARY	\$283.00	\$0.00	\$283.00	\$0.00	\$0.00	\$283.00	\$0.00	\$283.00	100.00%
1010.01901.2220.100.56420	LIBRARY BOOKS - ELEMENTARY	\$2,500.00	\$0.00	\$2,500.00	\$0.00	\$1,229.65	\$1,270.35	\$0.00	\$1,270.35	50.81%
1010.01901.2220.100.56430	LIBRARY PERIODICALS - ELEMENTARY	\$266.00	\$0.00	\$266.00	\$0.00	\$0.00	\$266.00	\$0.00	\$266.00	100.00%
1010.01901.2410.100.51100	SALARY-PRINCIPALS-ELEMENTA RY	\$230,705.00	\$0.00	\$230,705.00	\$17,746.54	\$133,099.05	\$97,605.95	\$0.00	\$97,605.95	42.31%
1010.01901.2410.100.51110	SALARY-SECRETARY-ELEMENTA RY	\$55,955.00	\$0.00	\$55,955.00	\$3,690.05	\$27,708.44	\$28,246.56	\$0.00	\$28,246.56	50.48%
1010.01901.2410.100.56120	ADMIN SUPPLIES-ELEMENTARY	\$4,500.00	\$0.00	\$4,500.00	\$112.00	\$1,619.45	\$2,880.55	\$0.00	\$2,880.55	64.01%
1010.01901.2410.100.58100	DUES AND FEES-PRINCIPAL-ELEMENTARY	\$2,733.00	\$0.00	\$2,733.00	\$0.00	\$200.00	\$2,533.00	\$775.00	\$1,758.00	64.32%
1010.01901.2500.100.54320	TECHNOLOGY EQUIP REPAIRS-ELEMENTARY	\$500.00	\$0.00	\$500.00	\$0.00	\$259.24	\$240.76	\$0.00	\$240.76	48.15%
1010.01901.2660.100.55300	SECURITY/COMMUNICATIONS-E LEMENTARY	\$640.00	\$0.00	\$640.00	\$0.00	\$0.00	\$640.00	\$0.00	\$640.00	100.00%
	LOCATION: Brooklyn Elementary School - 01901	\$2,618,057.00	\$42,466.43	\$2,660,523.43	\$194,036.79	\$1,184,343.57	\$1,476,179.86	\$8,123.72	\$1,468,056.14	55.18%
1010.01951.1000.100.51103	SALARY-TEACHER SUBSTITUTE - BMS	\$57,000.00	\$0.00	\$57,000.00	\$2,499.70	\$9,748.83	\$47,251.17	\$0.00	\$47,251.17	82.90%
1010.01951.1000.100.51111	SALARY-TEACHER-MIDDLE SCHOOL	\$1,947,351.00	\$89,241.54	\$2,036,592.54	\$164,926.08	\$961,936.77	\$1,074,655.77	\$0.00	\$1,074,655.77	52.77%
1010.01951.1000.100.56410	TEXTBOOKS-MIDDLE SCHOOL	\$7,500.00	\$0.00	\$7,500.00	\$0.00	\$692.08	\$6,807.92	\$212.00	\$6,595.92	87.95%
1010.01951.1000.100.58100	DUES AND FEES-MIDDLE SCHOOL	\$4,015.00	\$0.00	\$4,015.00	\$0.00	\$385.00	\$3,630.00	\$0.00	\$3,630.00	90.41%
1010.01951.2130.100.51110	SALARY - SCHOOL NURSE - MIDDLE SCHOOL	\$49,324.00	\$0.00	\$49,324.00	\$4,268.51	\$26,089.30	\$23,234.70	\$0.00	\$23,234.70	47.11%
1010.01951.2130.100.53400	PROFESSIONAL SERVICES-HEALTH-MIDDLE	\$500.00	\$0.00	\$500.00	\$250.00	\$500.00	\$0.00	\$0.00	\$0.00	0.00%
1010.01951.2130.100.56900	SUPPLIES-HEALTH-MIDDLE SCHOOL	\$1,069.00	\$0.00	\$1,069.00	\$0.00	\$796.38	\$272.62	\$0.00	\$272.62	25.50%
1010.01951.2140.100.53400	PROFESSIONAL SERVICES-ASSESSMENTS-MIDD	\$2,300.00	\$0.00	\$2,300.00	\$0.00	\$75.00	\$2,225.00	\$0.00	\$2,225.00	96.74%
1010.01951.2200.100.56110	INSTRUCTIONAL SUPPLIES-MIDDLE SCHOOL	\$20,647.00	\$0.00	\$20,647.00	\$438.00	\$3,416.12	\$17,230.88	\$252.49	\$16,978.39	82.23%
1010.01951.2213.100.53200	INSTRUCTIONAL SERVICES-MIDDLE SCHOOL	\$19,147.00	\$0.00	\$19,147.00	\$0.00	\$7,055.00	\$12,092.00	\$0.00	\$12,092.00	63.15%
1010.01951.2220.100.56420	LIBRARY BOOKS-MIDDLE SCHOOL	\$2,020.00	\$0.00	\$2,020.00	\$0.00	\$0.00	\$2,020.00	\$0.00	\$2,020.00	100.00%
1010.01951.2220.100.56430	LIBRARY PERIODICALS-MIDDLE SCHOOL	\$500.00	\$0.00	\$500.00	\$0.00	\$0.00	\$500.00	\$0.00	\$500.00	100.00%

Brooklyn Board of Education

Budget Expenditure Report

From Date: 1/1/2021

To Date: 1/31/2021

Fiscal Year: 2020-2021

Include pre encumbrance

Print accounts with zero balance

Filter Encumbrance Detail by Date Range

Exclude inactive accounts with zero balance

Account Number	Description	Budget	Adjustments	GL Budget	Current	YTD	Balance	Encumbrance	Budget Bal	% Rem
1010.01951.2230.100.54320	TECHNOLOGY EQUIP REPAIRS-MIDDLE SCHOOL	\$2,275.00	\$0.00	\$2,275.00	\$0.00	\$2,262.23	\$12.77	\$0.00	\$12.77	0.56%
1010.01951.2300.100.56120	ADMIN SUPPLIES-MIDDLE SCHOOL	\$5,000.00	\$0.00	\$5,000.00	\$155.97	\$2,009.18	\$2,990.82	\$56.83	\$2,933.99	58.68%
1010.01951.2410.100.51100	SALARY-PRINCIPALS - MIDDLE SCHOOL	\$230,705.00	\$0.00	\$230,705.00	\$17,746.54	\$133,099.05	\$97,605.95	\$0.00	\$97,605.95	42.31%
1010.01951.2410.100.51110	SALARY-SECRETARY-MIDDLE SCHOOL	\$55,955.00	\$0.00	\$55,955.00	\$3,691.20	\$27,754.53	\$28,200.47	\$0.00	\$28,200.47	50.40%
1010.01951.2410.100.55300	TELEPHONE - BMS	\$0.00	\$0.00	\$0.00	\$157.55	\$1,135.26	(\$1,135.26)	\$359.46	(\$1,494.72)	0.00%
1010.01951.2500.100.53520	PROF SERVICES-TECH-MIDDLE SCHOOL	\$2,400.00	\$0.00	\$2,400.00	\$0.00	\$1,341.03	\$1,058.97	\$0.00	\$1,058.97	44.12%
1010.01951.2600.100.54300	EQUIPMENT REPAIRS - MIDDLE SCHOOL	\$2,275.00	\$0.00	\$2,275.00	\$0.00	\$106.54	\$2,168.46	\$0.00	\$2,168.46	95.32%
1010.01951.2700.100.55150	TRNSP. FIELD TRIPS/ATHLETICS - MIDDLE SCHOOL	\$23,725.00	(\$10,000.00)	\$13,725.00	\$0.00	\$0.00	\$13,725.00	\$0.00	\$13,725.00	100.00%
1010.01951.2900.900.51151	SALARY-ATHLETICS STAFF	\$25,245.00	(\$15,000.00)	\$10,245.00	\$0.00	\$0.00	\$10,245.00	\$0.00	\$10,245.00	100.00%
1010.01951.2900.900.53540	REFEREES-STUDENT SPORTS	\$3,980.00	\$0.00	\$3,980.00	\$0.00	\$0.00	\$3,980.00	\$0.00	\$3,980.00	100.00%
1010.01951.2900.900.56900	CO-CURRICULAR SUPPLIES - MIDDLE SCHOOL	\$4,260.00	\$0.00	\$4,260.00	\$0.00	\$0.00	\$4,260.00	\$0.00	\$4,260.00	100.00%
	LOCATION: Brooklyn Middle School - 01951	\$2,467,193.00	\$64,241.54	\$2,531,434.54	\$194,133.55	\$1,178,402.30	\$1,353,032.24	\$880.78	\$1,352,151.46	53.41%
1010.01999.1000.100.52510	TUITION REIMBURSEMENT	\$15,000.00	\$0.00	\$15,000.00	\$4,799.00	\$9,598.00	\$5,402.00	\$0.00	\$5,402.00	36.01%
1010.01999.1000.100.55301	POSTAGE	\$2,500.00	\$0.00	\$2,500.00	\$187.09	\$1,074.18	\$1,425.82	\$774.18	\$651.64	26.07%
1010.01999.1200.200.51104	SALARY - PARAPROF. SUB/SPEC.ED	\$33,880.00	(\$30,000.00)	\$3,880.00	\$205.70	\$2,279.79	\$1,600.21	\$0.00	\$1,600.21	41.24%
1010.01999.1200.200.51111	SALARY-SPECIAL EDUCATION TEACHERS	\$838,335.00	\$0.00	\$838,335.00	\$54,031.06	\$323,795.48	\$514,539.52	\$0.00	\$514,539.52	61.38%
1010.01999.1200.200.51112	SALARY-PARAPROFESSIONALS SPEC. ED.	\$849,656.00	\$0.00	\$849,656.00	\$57,913.03	\$381,128.20	\$468,527.80	\$0.00	\$468,527.80	55.14%
1010.01999.1200.200.51119	SALARY - ESY TEACHER - SPECIAL ED	\$4,982.00	\$0.00	\$4,982.00	\$0.00	\$8,225.12	(\$3,243.12)	\$0.00	(\$3,243.12)	-65.10%
1010.01999.1200.200.51129	SALARY - ESY PARA - SPECIAL ED	\$9,801.00	(\$4,041.54)	\$5,759.46	\$0.00	\$2,516.34	\$3,243.12	\$0.00	\$3,243.12	56.31%
1010.01999.1200.200.53200	INSTR TRAINING - SPEC ED STAFF	\$5,000.00	\$0.00	\$5,000.00	\$0.00	\$1,495.00	\$3,505.00	\$1,575.00	\$1,930.00	38.60%
1010.01999.1200.200.55630	TUITION-SPECIAL ED-PRIVATE	\$817,274.00	\$0.00	\$817,274.00	\$88,872.73	\$487,905.92	\$329,368.08	\$593,507.41	(\$264,139.33)	-32.32%
1010.01999.1200.200.55640	TUITION-SPEC. ED-IN STATE LEA	\$712,796.00	\$0.00	\$712,796.00	\$11,593.83	\$414,464.80	\$298,331.20	\$526,912.56	(\$228,581.36)	-32.07%
1010.01999.1200.200.55650	TUITION-SPEC. ED-PRIV.-OUT OF STATE	\$87,851.00	\$0.00	\$87,851.00	\$0.00	\$22,952.23	\$64,898.77	\$2,348.50	\$62,550.27	71.20%
1010.01999.1200.200.57345	INSTR. EQUIPMENT - SPECIAL ED	\$5,500.00	\$0.00	\$5,500.00	\$0.00	\$208.16	\$5,291.84	\$64.80	\$5,227.04	95.04%
1010.01999.1200.200.58100	DUES AND FEES - SPECIAL ED	\$800.00	\$0.00	\$800.00	\$660.92	\$1,232.68	(\$432.68)	\$871.77	(\$1,304.45)	-163.06%
1010.01999.1250.200.51111	SALARY-SPEECH THERAPIST	\$179,221.00	(\$13,500.00)	\$165,721.00	\$12,415.54	\$63,673.72	\$102,047.28	\$0.00	\$102,047.28	61.58%
1010.01999.2100.100.55600	TUITION-HIGH SCHOOL	\$4,863,946.00	\$0.00	\$4,863,946.00	\$379,124.77	\$2,757,769.67	\$2,106,176.33	\$2,115,637.59	(\$9,461.26)	-0.19%
1010.01999.2100.100.55610	TUITION-VO AG	\$69,595.00	\$0.00	\$69,595.00	\$6,823.00	\$34,115.00	\$35,480.00	\$34,115.00	\$1,365.00	1.96%
1010.01999.2100.200.51100	SALARY- STUDENT SERVICES DIRECTOR	\$112,881.00	\$0.00	\$112,881.00	\$8,946.40	\$62,624.80	\$50,256.20	\$0.00	\$50,256.20	44.52%
1010.01999.2100.200.51110	SALARY - SECRETARY, SPECIAL ED	\$47,050.00	\$0.00	\$47,050.00	\$3,360.34	\$19,565.80	\$27,484.20	\$0.00	\$27,484.20	58.41%
1010.01999.2100.200.55800	TRAVEL - DIR. OF STUDENT SERVICES OFFICE	\$2,500.00	\$0.00	\$2,500.00	\$0.00	\$0.00	\$2,500.00	\$0.00	\$2,500.00	100.00%
1010.01999.2100.200.56120	ADMIN SUPPLIES-DIR. OF STUDENT SERV.	\$1,500.00	\$0.00	\$1,500.00	\$0.00	\$1,470.74	\$29.26	\$0.00	\$29.26	1.95%
1010.01999.2130.200.53040	INSTR SERVICES - NURSING	\$76,440.00	\$0.00	\$76,440.00	\$0.00	\$0.00	\$76,440.00	\$35,280.00	\$41,160.00	53.85%
1010.01999.2140.200.51111	SALARY - PSYCHOLOGIST-SP.ED.	\$79,841.00	\$0.00	\$79,841.00	\$7,258.28	\$43,549.68	\$36,291.32	\$0.00	\$36,291.32	45.45%

Brooklyn Board of Education

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Filter Encumbrance Detail by Date Range

Exclude inactive accounts with zero balance

Account Number	Description	Budget	Adjustments	GL Budget	Current	YTD	Balance	Encumbrance	Budget Bal	% Rem
1010.01999.2140.200.53400	HEALTH EXAMS- PSYCHOLOGICAL	\$10,000.00	\$0.00	\$10,000.00	\$0.00	\$4,575.00	\$5,425.00	\$60.00	\$5,365.00	53.65%
1010.01999.2150.200.53200	INSTR. SERVICES - SPEECH	\$0.00	\$13,500.00	\$13,500.00	\$0.00	\$13,528.00	(\$28.00)	\$0.00	(\$28.00)	-0.21%
1010.01999.2160.200.51111	SALARY-OCCUPATIONAL THERAPIST	\$0.00	\$72,000.00	\$72,000.00	\$6,545.46	\$39,272.76	\$32,727.24	\$0.00	\$32,727.24	45.45%
1010.01999.2160.200.53230	INSTR SERVICES - OCCUPATIONAL THERAPY	\$72,000.00	(\$72,000.00)	\$0.00	\$0.00	\$20.50	(\$20.50)	\$0.00	(\$20.50)	0.00%
1010.01999.2170.200.53200	INSTR SERVICES - PHYSICAL THERAPY	\$39,000.00	\$0.00	\$39,000.00	(\$1,324.47)	\$56,540.47	(\$17,540.47)	\$0.00	(\$17,540.47)	-44.98%
1010.01999.2190.200.51110	SALARY-SOCIAL WORKER-SPEC. ED.	\$190,360.00	\$0.00	\$190,360.00	\$6,439.36	\$38,636.16	\$151,723.84	\$0.00	\$151,723.84	79.70%
1010.01999.2200.100.51151	SALARY-ADVISORS/STUDENT ACTIVITY	\$30,379.00	(\$10,000.00)	\$20,379.00	\$0.00	\$0.00	\$20,379.00	\$0.00	\$20,379.00	100.00%
1010.01999.2200.100.53230	INSTR. SERVICES-STUDENTS	\$5,000.00	\$0.00	\$5,000.00	\$0.00	\$1,000.00	\$4,000.00	\$0.00	\$4,000.00	80.00%
1010.01999.2200.100.55300	TELEPHONE - INSTRUCTIONAL	\$12,300.00	\$0.00	\$12,300.00	\$0.00	\$0.00	\$12,300.00	\$0.00	\$12,300.00	100.00%
1010.01999.2213.100.53200	INSTR. SERVICES-STAFF TRAINING	\$10,000.00	\$0.00	\$10,000.00	\$0.00	\$405.00	\$9,595.00	\$1,215.00	\$8,380.00	83.80%
1010.01999.2300.100.51110	SALARY - EXECUTIVE ASSISTANT	\$41,097.00	\$0.00	\$41,097.00	\$4,384.62	\$21,601.27	\$19,495.73	\$0.00	\$19,495.73	47.44%
1010.01999.2300.100.56120	SUPPLIES - ADMIN SUPPLIES	\$6,000.00	\$0.00	\$6,000.00	\$1,572.57	\$7,942.12	(\$1,942.12)	\$1,769.00	(\$3,711.12)	-61.85%
1010.01999.2310.100.51110	SALARY - HUMAN RESOURCES (0.5 FTE)	\$0.00	\$0.00	\$0.00	\$2,740.38	\$6,796.14	(\$6,796.14)	\$15,126.86	(\$21,923.00)	0.00%
1010.01999.2310.100.55910	ADULT EDUCATION - HIGH SCHOOL	\$27,575.00	\$0.00	\$27,575.00	\$0.00	\$29,841.00	(\$2,266.00)	\$0.00	(\$2,266.00)	-8.22%
1010.01999.2320.100.51100	SALARY- SUPERINTENDENT	\$160,992.00	\$0.00	\$160,992.00	\$12,554.74	\$94,737.45	\$66,254.55	\$0.00	\$66,254.55	41.15%
1010.01999.2320.100.51110	SALARY - FINANCIAL SECRETARIES	\$103,000.00	\$0.00	\$103,000.00	\$8,081.54	\$60,173.11	\$42,826.89	\$0.00	\$42,826.89	41.58%
1010.01999.2320.100.55300	TELEPHONE-SUPT.	\$0.00	\$0.00	\$0.00	\$734.37	\$3,840.21	(\$3,840.21)	\$3,763.71	(\$7,603.92)	0.00%
1010.01999.2320.100.55800	TRAVEL - SUPT. OFFICE	\$2,500.00	\$0.00	\$2,500.00	\$230.76	\$1,153.80	\$1,346.20	\$0.00	\$1,346.20	53.85%
1010.01999.2320.100.58100	DUES AND FEES - SUPT.	\$7,000.00	\$0.00	\$7,000.00	\$0.00	\$10,379.50	(\$3,379.50)	\$700.00	(\$4,079.50)	-58.28%
1010.01999.2410.100.55300	TELEPHONE-PRINCIPAL'S OFFICE	\$0.00	\$0.00	\$0.00	\$126.67	\$881.46	(\$881.46)	\$554.82	(\$1,436.28)	0.00%
1010.01999.2410.100.55800	TRAVEL - PRINCIPAL'S OFFICE	\$2,000.00	\$0.00	\$2,000.00	\$0.00	\$0.00	\$2,000.00	\$0.00	\$2,000.00	100.00%
1010.01999.2500.100.51152	SALARY-TECHNOLOGY-SUMMER	\$7,400.00	\$0.00	\$7,400.00	\$0.00	\$6,337.65	\$1,062.35	\$0.00	\$1,062.35	14.36%
1010.01999.2500.100.53500	CONTRACTED SERV-TECHNOLOGY	\$62,700.00	\$0.00	\$62,700.00	\$18,162.09	\$34,563.73	\$28,136.27	\$3,324.00	\$24,812.27	39.57%
1010.01999.2500.100.54430	RENTAL OF COMPUTERS/PRINTERS	\$52,000.00	\$0.00	\$52,000.00	\$4,809.89	\$32,931.23	\$19,068.77	\$24,259.81	(\$5,191.04)	-9.98%
1010.01999.2500.100.56500	SUPPLIES-TECHNOLOGY RELATED	\$0.00	\$0.00	\$0.00	\$0.00	\$1,505.61	(\$1,505.61)	\$0.00	(\$1,505.61)	0.00%
1010.01999.2510.100.51100	SALARY - FINANCE DIRECTOR (.56 FTE)	\$50,500.00	\$0.00	\$50,500.00	\$4,943.09	\$25,704.08	\$24,795.92	\$25,703.92	(\$908.00)	-1.80%
1010.01999.2510.100.52110	INSURANCE - HEALTH ER	\$1,301,758.00	\$0.00	\$1,301,758.00	(\$4,163.93)	\$745,074.27	\$556,683.73	\$639,839.87	(\$83,156.14)	-6.39%
1010.01999.2510.100.52115	INSURANCE - DENTAL ER	\$88,373.00	\$0.00	\$88,373.00	(\$84.31)	\$35,188.42	\$53,184.58	\$47,866.94	\$5,317.64	6.02%
1010.01999.2510.100.52120	HSA CONTRIBUTION ER	\$185,000.00	\$0.00	\$185,000.00	\$81,875.00	\$169,375.00	\$15,625.00	\$0.00	\$15,625.00	8.45%
1010.01999.2510.100.52200	FICA/MEDICARE MATCHING CONTRIBUTION	\$160,000.00	\$0.00	\$160,000.00	\$16,925.29	\$113,190.26	\$46,809.74	\$0.00	\$46,809.74	29.26%
1010.01999.2510.100.52300	PENSION/RETIREMENT CONTRIB.	\$227,180.00	\$0.00	\$227,180.00	\$0.00	\$227,180.00	\$0.00	\$0.00	\$0.00	0.00%
1010.01999.2510.100.52600	UNEMPLOYMENT	\$35,000.00	\$0.00	\$35,000.00	\$869.15	\$8,074.01	\$26,925.99	\$15,925.99	\$11,000.00	31.43%
1010.01999.2510.100.52700	WORKERS' COMPENSATION	\$82,500.00	\$0.00	\$82,500.00	\$0.00	\$59,593.86	\$22,906.14	\$19,864.13	\$3,042.01	3.69%
1010.01999.2510.100.52800	LIFE INSURANCE	\$18,228.00	\$0.00	\$18,228.00	\$1,143.17	\$10,177.69	\$8,050.31	\$8,007.43	\$42.88	0.24%

Brooklyn Board of Education

Budget Expenditure Report

From Date: 1/1/2021

To Date: 1/31/2021

Fiscal Year: 2020-2021

Include pre encumbrance

Print accounts with zero balance

Filter Encumbrance Detail by Date Range

Exclude inactive accounts with zero balance

Account Number	Description	Budget	Adjustments	GL Budget	Current	YTD	Balance	Encumbrance	Budget Bal	% Rem
1010.01999.2510.100.53020	LEGAL SERVICES	\$50,000.00	\$0.00	\$50,000.00	\$0.00	\$13,454.00	\$36,546.00	\$11,546.00	\$25,000.00	50.00%
1010.01999.2510.100.53400	2020-2021 PAYROLL SERVICES	\$36,141.00	\$0.00	\$36,141.00	\$5,054.30	\$13,787.00	\$22,354.00	\$12,558.00	\$9,796.00	27.10%
1010.01999.2510.100.53410	AUDIT SERVICES - BOARD OF ED.	\$23,000.00	\$0.00	\$23,000.00	\$0.00	\$16,700.00	\$6,300.00	\$4,500.00	\$1,800.00	7.83%
1010.01999.2510.100.55400	ADVERTISING	\$7,000.00	\$0.00	\$7,000.00	\$0.00	\$6,530.90	\$469.10	\$0.00	\$469.10	6.70%
1010.01999.2510.100.58100	DUES AND FEES - BOARD OF ED	\$15,000.00	\$0.00	\$15,000.00	\$81.00	\$10,842.12	\$4,157.88	\$0.00	\$4,157.88	27.72%
1010.01999.2510.100.59140	CONTINGENCY	\$40,500.00	(\$37,966.43)	\$2,533.57	\$0.00	\$0.00	\$2,533.57	\$0.00	\$2,533.57	100.00%
1010.01999.2600.100.54101	REFUSE REMOVAL	\$13,200.00	\$0.00	\$13,200.00	\$760.00	\$5,816.00	\$7,384.00	\$4,572.00	\$2,812.00	21.30%
1010.01999.2600.100.54300	EQUIPMENT REPAIRS	\$15,000.00	\$0.00	\$15,000.00	\$2,926.57	\$7,675.35	\$7,324.65	\$20,527.90	(\$13,203.25)	-88.02%
1010.01999.2600.100.54303	GROUNDS MAINTENANCE	\$17,000.00	\$0.00	\$17,000.00	\$602.45	\$7,092.61	\$9,907.39	\$1,158.00	\$8,749.39	51.47%
1010.01999.2600.100.55200	PROPERTY & LIABILITY INSURANCE	\$69,000.00	\$0.00	\$69,000.00	\$0.00	\$52,843.82	\$16,156.18	\$17,614.18	(\$1,458.00)	-2.11%
1010.01999.2600.100.56100	SUPPLIES-BLDG.,GROUNDS & EQUIP.	\$85,000.00	(\$22,925.00)	\$62,075.00	\$6,032.56	\$21,089.91	\$40,985.09	\$21,460.74	\$19,524.35	31.45%
1010.01999.2610.100.51104	SALARY- CUSTODIAL SUBS	\$3,000.00	\$0.00	\$3,000.00	\$106.75	\$2,861.65	\$138.35	\$0.00	\$138.35	4.61%
1010.01999.2610.100.51110	SALARY- CUSTODIANS	\$324,242.00	\$32,925.00	\$357,167.00	\$31,501.24	\$204,930.78	\$152,236.22	\$0.00	\$152,236.22	42.62%
1010.01999.2610.100.51130	SALARY - CUSTODIAL OT	\$2,000.00	\$0.00	\$2,000.00	\$0.00	\$0.00	\$2,000.00	\$0.00	\$2,000.00	100.00%
1010.01999.2610.100.53520	TECHNICAL ASSISTANCE/BUILDING	\$34,000.00	(\$6,000.00)	\$28,000.00	\$0.00	\$5,190.96	\$22,809.04	\$1,237.43	\$21,571.61	77.04%
1010.01999.2610.100.54301	BUILDING REPAIRS	\$36,000.00	(\$10,000.00)	\$26,000.00	\$0.00	\$16,079.18	\$9,920.82	\$10,581.64	(\$660.82)	-2.54%
1010.01999.2610.100.54411	WATER/SEWAGE SERVICES	\$23,500.00	\$0.00	\$23,500.00	\$6,990.83	\$14,604.41	\$8,895.59	\$8,855.59	\$40.00	0.17%
1010.01999.2610.100.56220	ELECTRICITY	\$90,000.00	\$0.00	\$90,000.00	\$14,054.13	\$70,065.01	\$19,934.99	\$58,800.47	(\$38,865.48)	-43.18%
1010.01999.2610.100.56230	PROPANE GAS-GENERATOR	\$1,000.00	\$0.00	\$1,000.00	\$0.00	\$0.00	\$1,000.00	\$1,000.00	\$0.00	0.00%
1010.01999.2610.100.56240	FUEL OIL	\$102,979.00	\$0.00	\$102,979.00	\$10,562.42	\$25,368.61	\$77,610.39	\$70,000.00	\$7,610.39	7.39%
1010.01999.2660.100.54302	FIRE ALARM/SECURITY MAINTENANCE	\$16,000.00	\$0.00	\$16,000.00	\$733.72	\$11,553.86	\$4,446.14	\$339.50	\$4,106.64	25.67%
1010.01999.2700.100.55100	TRANS/LOCAL&HIGH REIMBURSABLE	\$874,695.00	\$0.00	\$874,695.00	\$0.00	\$76,550.00	\$798,145.00	\$720,905.00	\$77,240.00	8.83%
1010.01999.2700.100.56260	TRANS.VEHICLE-GAS/DIESEL	\$97,733.00	\$0.00	\$97,733.00	(\$403.26)	\$10,831.59	\$86,901.41	\$65,800.11	\$21,101.30	21.59%
1010.01999.2700.200.55110	TRANS./SP.ED.-CONNECTICUT LEA	\$287,560.00	\$0.00	\$287,560.00	\$0.00	\$26,180.10	\$261,379.90	\$226,564.00	\$34,815.90	12.11%
1010.01999.2700.200.55130	TRANS. SPECIAL ED - ESY	\$18,700.00	(\$18,700.00)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%
1010.01999.3100.100.51131	SALARY - CAFETERIA OT	\$300.00	\$0.00	\$300.00	\$0.00	\$0.00	\$300.00	\$0.00	\$300.00	100.00%
	LOCATION: Districtwide - 01999	\$14,088,741.00	(\$106,707.97)	\$13,982,033.03	\$881,759.84	\$7,119,912.93	\$6,862,120.10	\$5,377,088.85	\$1,485,031.25	10.62%
Grand Total:		\$19,173,991.00	\$0.00	\$19,173,991.00	\$1,269,930.18	\$9,482,658.80	\$9,691,332.20	\$5,386,093.35	\$4,305,238.85	22.45%

End of Report

1010 General Fund BROOKLYN BOE EXPENDITURE REPORT
Fiscal Year 2020-2021 YTD Through January 22, 2021 Payroll

Acct	Account Name	Adopted		Adjusted		Encumbered	Total Exp/Encum	Adj. v Expense	
		Budget 20-21	Transfers	Budget 20-21	Ytd Expended			Balance	% Exp/Encum
1100	Total Salaries	\$7,976,184	\$164,091	\$8,140,275	\$3,713,418	\$4,328,543	\$8,041,961	\$98,315	100.82%
1100	ADMINISTRATORS SALARY	\$785,783	\$0	\$785,783	\$449,495	\$339,595	\$789,090	(\$3,307)	100.42%
1103 / 1104	SUBSTITUTE TEACHERS & PARAPROFESSIONALS	\$150,880	-\$30,000	\$120,880	\$17,304	\$20,997	\$38,302	\$82,578	25.39%
1110	SUPPORT STAFF (SEC., CUST., NURSE, SOC WORK)	\$923,578	\$47,189	\$970,767	\$487,994	\$424,036	\$912,030	\$58,737	98.75%
1111	TEACHERS	\$5,168,370	\$175,944	\$5,344,314	\$2,360,417	\$3,005,783	\$5,366,200	(\$21,887)	103.83%
1112	PARAPROFESSIONALS	\$867,466	\$0	\$867,466	\$381,128	\$507,507	\$888,636	(\$21,170)	102.44%
1119 / 1129	ESY TEACHERS & PARAPROFESSIONALS	\$14,783	-\$4,042	\$10,741	\$10,741	\$0	\$10,741	\$0	72.66%
1130	CUSTODIAL OVERTIME	\$2,000	\$0	\$2,000	\$0	\$0	\$0	\$2,000	0.00%
1131	CAFETERIA OVERTIME	\$300	\$0	\$300	\$0	\$0	\$0	\$300	0.00%
1151	STIPENDS	\$55,624	-\$25,000	\$30,624	\$0	\$30,624	\$30,624	\$0	55.06%
1152	TECHNOLOGY (SUMMER)	\$7,400	\$0	\$7,400	\$6,338	\$0	\$6,338	\$1,062	85.64%
2000	Total Benefits	\$2,113,039	\$0	\$2,113,039	\$1,367,673	\$852,455	\$2,220,128	(\$107,089)	105.07%
2110 / 2115	HEALTH & DENTAL INSURANCE	\$1,390,131	\$0	\$1,390,131	\$780,263	\$687,707	\$1,467,970	(\$77,839)	105.60%
2120	H.S.A. CONTRIBUTIONS	\$185,000	\$0	\$185,000	\$169,375	\$0	\$169,375	\$15,625	91.55%
2200	FICA/MEDICARE	\$160,000	\$0	\$160,000	\$103,412	\$115,544	\$218,956	(\$58,956)	136.85%
2300	PENSION/RETIREMENT	\$227,180	\$0	\$227,180	\$227,180	\$0	\$227,180	\$0	100.00%
2510	TUITION REIMBURSEMENT	\$15,000	\$0	\$15,000	\$9,598	\$5,402	\$15,000	\$0	100.00%
2600	UNEMPLOYMENT COMPENSATION	\$35,000	\$0	\$35,000	\$8,074	\$15,926	\$24,000	\$11,000	68.57%
2700	WORKERS COMPENSATION	\$82,500	\$0	\$82,500	\$59,594	\$19,869	\$79,462	\$3,038	96.32%
2800	LIFE INSURANCE	\$18,228	\$0	\$18,228	\$10,178	\$8,007	\$18,185	\$43	99.76%
3000	Total Prof. Services	\$473,608	-\$64,500	\$409,108	\$189,968	\$71,295	\$261,264	\$147,844	55.16%
3020	BOARD OF ED - LEGAL	\$50,000	\$0	\$50,000	\$13,454	\$11,546	\$25,000	\$25,000	50.00%
3040	NURSING SERVICES	\$76,440	\$0	\$76,440	\$0	\$35,280	\$35,280	\$41,160	46.15%
3200 / 3230	PROFESSIONAL & PUPIL SERVICES	\$168,647	-\$58,500	\$110,147	\$94,253	\$2,790	\$97,043	\$13,104	57.54%
3400 / 3410	OTHER PROFESSIONAL SERVICES & AUDIT	\$75,441	\$0	\$75,441	\$41,165	\$17,118	\$58,283	\$17,158	77.26%
3500 / 3520	TECHNICAL SERVICES	\$99,100	-\$6,000	\$93,100	\$41,096	\$4,561	\$45,657	\$47,443	0.00%
3540	SPORTS OFFICIALS	\$3,980	\$0	\$3,980	\$0	\$0	\$0	\$3,980	0.00%
4000	Total Contracted Services	\$177,750	-\$10,000	\$167,750	\$98,381	\$70,294	\$168,675	(\$925)	94.89%
4101	REFUSE REMOVAL	\$13,200	\$0	\$13,200	\$5,816	\$4,572	\$10,388	\$2,812	78.70%
4300	EQUIPMENT REPAIRS	\$17,275	\$0	\$17,275	\$7,782	\$20,528	\$28,310	(\$11,035)	163.88%
4301	BUILDING MAINTENANCE	\$36,000	-\$10,000	\$26,000	\$16,079	\$10,582	\$26,661	(\$661)	74.06%
4302	FIRE/SECURITY MAINTENANCE	\$16,000	\$0	\$16,000	\$11,554	\$340	\$11,893	\$4,107	74.33%
4303	GROUNDS MAINTENANCE	\$17,000	\$0	\$17,000	\$7,093	\$1,158	\$8,251	\$8,749	48.53%
4320	TECHNOLOGY RELATED REPAIRS	\$2,775	\$0	\$2,775	\$2,521	\$0	\$2,521	\$254	90.86%
4411	WATER/SEWER	\$23,500	\$0	\$23,500	\$14,604	\$8,856	\$23,460	\$40	99.83%
4430	RENTAL OF COMPUTER RELATED EQUIP	\$52,000	\$0	\$52,000	\$32,931	\$24,260	\$57,191	(\$5,191)	109.98%

1010 General Fund BROOKLYN BOE EXPENDITURE REPORT
Fiscal Year 2020-2021 YTD Through January 22, 2021 Payroll

5100	TRANSPORTATION-REGULAR	\$874,695	\$0	\$874,695	\$76,550	\$720,905	\$797,455	\$77,240	91.17%
5110	TRANSPORTATION-SPECIAL ED	\$287,560	\$0	\$287,560	\$26,180	\$226,564	\$252,744	\$34,816	87.89%
5130	TRANSPORTATION-ESY	\$18,700	-\$18,700	\$0	\$0	\$0	\$0	\$0	0.00%
5150	TRANSPORTATION-FIELD TRIPS/ATHLETIC	\$23,725	-\$10,000	\$13,725	\$0	\$0	\$0	\$13,725	0.00%
5200	LIABILITY INSURANCE	\$69,000	\$0	\$69,000	\$52,844	\$17,618	\$70,462	(\$1,462)	102.12%
5300	COMMUNICATIONS	\$12,940	\$0	\$12,940	\$5,857	\$4,678	\$10,535	\$2,405	81.41%
5301	POSTAGE	\$2,500	\$0	\$2,500	\$1,074	\$774	\$1,848	\$652	73.93%
5400	ADVERTISING	\$7,000	\$0	\$7,000	\$6,531	\$0	\$6,531	\$469	93.30%
5600	TUITION-HIGH SCHOOL & VO-AG	\$4,933,541	\$0	\$4,933,541	\$2,791,885	\$2,149,753	\$4,941,637	(\$8,096)	100.16%
5630 / 5640 / 5650	TUITION-SPECIAL ED	\$1,617,921	\$0	\$1,617,921	\$925,323	\$1,125,000	\$2,050,323	(\$432,402)	126.73%
5800	TRAVEL	\$7,000	\$0	\$7,000	\$923	\$0	\$923	\$6,077	13.19%
5910	ADULT EDUCATION	\$27,575	\$0	\$27,575	\$29,841	\$0	\$29,841	(\$2,266)	108.22%
5000	Total Other Services	\$7,882,157	-\$28,700	\$7,853,457	\$3,917,008	\$4,245,292	\$8,162,300	(\$308,843)	103.55%
6100	GENERAL SUPPLIES	\$92,593	-\$22,925	\$69,668	\$23,199	\$21,521	\$44,720	\$24,948	48.30%
6110	INSTRUCTIONAL SUPPLIES	\$34,534	\$0	\$34,534	\$12,457	\$586	\$13,043	\$21,491	37.77%
6120	ADMIN SUPPLIES	\$17,000	\$0	\$17,000	\$13,041	\$1,826	\$14,867	\$2,133	87.45%
6220	ELECTRICITY	\$90,000	\$0	\$90,000	\$70,065	\$58,800	\$128,865	(\$38,865)	143.18%
6230	PROPANE GAS	\$1,000	\$0	\$1,000	\$0	\$1,000	\$1,000	\$0	100.00%
6240	FUEL OIL	\$102,979	\$0	\$102,979	\$25,369	\$70,000	\$95,369	\$7,610	92.61%
6260	GASOLINE/DIESEL	\$97,733	\$0	\$97,733	\$10,832	\$65,800	\$76,632	\$21,101	78.41%
6400	BOOKS	\$5,500	\$0	\$5,500	\$2,406	\$0	\$2,406	\$3,094	43.74%
6410	TEXTBOOKS	\$23,751	\$0	\$23,751	\$2,286	\$7,167	\$9,453	\$14,298	39.80%
6420 / 6430	LIBRARY BOOKS / PERIODICALS	\$5,286	\$0	\$5,286	\$1,230	\$0	\$1,230	\$4,056	23.26%
6500	TECHNOLOGY SUPPLIES	\$0	\$0	\$0	\$1,506	\$0	\$1,506	(\$1,506)	0.00%
6900	OTHER SUPPLIES	\$5,329	\$0	\$5,329	\$796	\$0	\$796	\$4,533	14.94%
6000	Total Supplies	\$475,705	-\$22,925	\$452,780	\$163,186	\$226,700	\$389,886	\$62,894	81.96%
7000	EQUIPMENT	\$5,500	\$0	\$5,500	\$208	\$65	\$273	\$5,227	0.00%
7000	Total Equipment	\$5,500	\$0	\$5,500	\$208	\$65	\$273	\$5,227	0.00%
8100	DUES & FEES	\$29,548	\$0	\$29,548	\$22,958	\$2,347	\$25,305	\$4,243	85.64%
8000	Total Dues & Fees	\$29,548	\$0	\$29,548	\$22,958	\$2,347	\$25,305	\$4,243	85.64%
9140	CONTINGENCY	\$40,500	-\$37,966	\$2,534	\$0	\$0	\$0	\$2,534	0.00%
9000	Total Other	\$40,500	-\$37,966	\$2,534	\$0	\$0	\$0	\$2,534	0.00%
1010	Total General Fund	\$19,173,991	\$0	\$19,173,991	\$9,472,799	\$9,796,992	\$19,269,791	(\$95,800)	100.50%

Brooklyn Public Schools Enrollment Report 2020-21

1/19/2021

BES Grade Level, Sections	Pre-K	K	First	Second	Third	Fourth	Total
PK AM Class 1	12	18		17	17	18	82
PK PM Class 1	11	17	17				45
PK AM Class 2			16	17	16	18	67
PK PM Class 2		17	17	17	17	15	83
PK AM Class 3	11	17	18	17	17	15	95
PK PM Class 3	10						10
IIC	2	1	2	0	0	1	6
TLC	0	0	0	2	2	0	4
CARD	0	0	0	0	0	1	1
Total in person	46	70	70	70	69	68	393
Opt Out/Distance Learning. 6 staff	14	11	14	17	22	11	89
Homeschooled	8	8	8	5	3	3	35
Total Enrolled in this grade (excluding homeschooled)	60	81	84	87	91	79	482

BMS Grade Level, Sections	Fifth	Sixth	Seventh	Eighth			Total
	12	16	12	11			51
	12	13	13	12			50
	12	11	14	9			46
	13	17	16	12			58
	12	3	15	11			41
	14						14
	1						1
Total in person	76	60	70	55	-	-	261
Opt Out/Distance Learning. 2 staff	16	16	22	15			69
Homeschooled	7	3	3	2			15
Total Enrolled in this grade (excluding homeschooled)	92	76	92	70			330
TOTAL OPT OUT DISTRICT PK-8							158
TOTAL ENROLLMENT IN DISTRICT PK-8							812

High School Stud	Ninth	Tenth	Eleventh	Twelfth			Total
WoodstockAcademy	49	65	42	34			190
Killingly High School	25	34	21	31			111
Killingly Ag Science	6	1	2	1			10
Plainfield High School	0	0	1	1			2
Parish Hill High School	0	0	1	1			2
Putnam High School	0	0	0	0			0
Griswold High School	0	0	0	0			0
Norwich Free Academy	2	6	1	4			13
Ellis Technical High School	16	17	18	19			70

Quinebaug Middle College	2	1	3	6			12
Act	0	0	0	2			2
**LEARN Magnet School	0	0	0	0			0
							412
OUT OF DISTRICT STUDENTS (not counted in totals)							21
TOTAL BROOKLYN STUDENT ENROLLMENT PK-21 Including Opt Out							1245
Total Enrollment	Sept	Oct	Nov	Dec	Jan	Feb	
2017-18	1314	1314	1311	1304	1310	1312	
2018-19	1332	1336	1327	1326	1325	1325	
2019-20	1342	1343	1344	1345	1348	1342	
2020-2021 (COVID, In/Opt Out)	1245	1242	1243	1246	1245		
Students who are homeschooled	50	35	47	50	50		

BROOKLYN PUBLIC SCHOOLS

Brooklyn, Connecticut 06234

January Brooklyn's Best

BES

1. Prek and kindergarten registration has begun. The office staff has worked hard to streamline the online process.
2. Ms. Craig and Ms. Stanton have completed TEAM
3. We had a successful 2nd school monitoring visit.

BMS

1. Grade 8 Science Teacher Ms. Mackewicz delivered Thank you notes from students to healthcare workers at Day Kimball.
2. Good Cookie Awards

Grade 5

Elijah McKenna
Abigail Langevin
Calianne Worth

Grade 6

Tomas Gutierrez
Kendal Ternowchek

Grade 7

Owen Lamontagne
Kloe Pike

Grade 8

Mishtie Patel-Gandhi
Devi Patel-Gandhi

3. Mrs. Kelly King had a published blog on the Assistments website.
4. Mrs. Sarah Kozey successfully completed TEAM

District

1. Congratulations to our teachers who have completed TEAM requirements. Teachers begin their careers and need to learn so many things, on top of the pandemic and changing teaching environment, they completed the requirements of TEAM.
2. Congratulations to our new IT Support Specialist: Mr. Gabe Bryant. He comes to us with extensive school IT experience. He will work with our current technology stipend positions held by Mr. Kelleher and Ms. Geeza to create a smooth transition and recommend how we can continue to grow and meet the changing technology needs of the district and the Town of Brooklyn.

Brooklyn Public Schools 2021-2022



First day of school: September 1, 2021, Tentative last day: June 14, 2022

Early Dismissal: 12:45

July '21						
Su	M	Tu	W	Th	F	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August '21						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September '21						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Date	Description
08/26-08/27	Professional Development
9/1	First Day of School
9/6/21	Labor Day
10/8/21	Professional Development
10/11/21	Columbus Day
11/2/21	Election Day, Professional Development
11/18/21	Early Dismissal for Conferences 12:45
11/24/21	Early Dismissal 12:45
11/25-11/26	Thanksgiving Break
12/1/21	Early Dismissal 12:45
12/24-1/2	Winter Break
1/17/22	Martin Luther King Day
2/21/22	President's Day
2/22/22	Professional Development
3/3/22	Early Dismissal 12:45
3/4/22	Professional Development
3/24/22	Early Dismissal for Conferences 12:45
4/15/22	Good Friday, 4/17 Easter
4/18-22	Spring Break
5/18/22	Early Dismissal 12:45
5/30/22	Memorial Day
6/14/22	Tentative Last Day

October '21						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November '21						
Su	M	Tu	W	Th	F	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December '21						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

January '22						
Su	M	Tu	W	Th	F	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

February '22						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28					

March '22						
Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

April '22						
Su	M	Tu	W	Th	F	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

May '22						
Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

June '22						
Su	M	Tu	W	Th	F	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Snow Days 6 or more snow days by January 31st will result in school being held on the following days:
 6th snow day: School on 2/22
 7th snow day: School on 3/4
 8th snow day: School on 4/22
 9th snow day: School on 4/21
 10th snow day: School on 4/20

BES Office: 860-774-7577 BES School Nurse: 860-774-4618

BMS Office: 860-774-9153 BMS School Nurse: 860-774-1498

Special Education: 860-774-1843

Central Office: 860-774-9732

Finance Office: 860-774-5925

Early Dismissal: 11/18, 11/24, 12/1, 3/3, 3/24, 5/18, last day

Prof. Devel: 8/6, 8/27, 11/2, 2/22, 3/4

PD Early dismissal: 12/1, 3/3, 5/18

151 student/157 staff days

Revised **DRAFT #4** (1/7/2021)

172 student/ 178 staff days

EASTCONN Bus: 860-412-0466

182 student/188 staff days