Section 1. Identification

1.1 Product Identifiers

Product Name: NANOMYTE® AQB-200CE

Product Description: 3 wt% carbon-coated Sodium Titanium Phosphate electrode sheets on carbon paper

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Identified Uses: Negative electrode / anode material for energy storage systems; laboratory chemicals; synthesis of substances; research and development

Uses Advised Against: Not for use in commercial batteries

1.3 Details of the Supplier of the Safety Data Sheet

Company: NEI Corporation

Address: 400 Apgar Drive, Unit E – Somerset, NJ 08873 – USA

Phone: +1-732-868-3141 Email: productinfo@neicorporation.com

1.4 Emergency Telephone Number

Manufacturer: +1-732-868-3142 (9am to 6pm EST / UTC -0500)

U.S. Poison Control Center: +1-800-222-1222

Section 2: Hazard(s) Identification

2.1 Classification of the Substance or Mixture

Not Classified. This product is defined as an "Article" under the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the REACH Regulation (EC) No. 1907/2006. In its manufactured and shipped form, it does not pose a physical hazard or health risk to humans or the environment.

2.2 Label Elements

None required

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

This product contains Carbon Black which is a classified carcinogen. In the manufactured form (coated sheet), this component is bound within a polymer matrix and not bio-available. However, any process that destroys this matrix (e.g., shredding, grinding, or burning) may release hazardous dust or fumes.

Section 3. Composition/Information on Ingredients

3.1 Substance / Mixture: Mixture

Component Name	Synonyms	Formula	CAS #	Coating Wt %
Carbon-coated Sodium Titanium Phosphate	NTP	$NaTi_2(PO_4)_3$	Unassigned	80 – 95%
Hazards: Not classified				
Carbon Black	Carbon, C	C	1333-86-4	2 – 10%
Powder Hazards: Carcinogenicity (Cat. 2, H351) | **Sheet Form Hazards:** Not classified (bound)				
Poly(vinylidene fluoride)	PVDF	$(C_2H_2F_2)_{x-}$	24937-79-9	2 – 10%
Hazards: Not a hazardous substance or mixture				
Carbon Paper	n/a	C	7440-44-0	(substrate)
Hazards: Not a hazardous substance or mixture				

NOTE: This product is a solid, multi-layered article. In this manufactured state, the ingredients are not respirable. The product does not meet the criteria for classification as a hazardous substance under GHS/OSHA/REACH. Hazards listed for individual components apply only to the release of dust or fumes through mechanical grinding, high-heat thermal decomposition, or chemical dissolution. **See Section 16*

Section 4. First-Aid Measures

4.1 Description of First Aid Measures

General Advice:

Move out of exposed area. Seek medical attention of irritation occurs. Show this SDS to the doctor in attendance.

Inhalation (dust only):

Inhalation is not a likely route of exposure for the intact sheet. If dust is generated from cutting or grinding and inhalation occurs, move the person to fresh air. If breathing is difficult, seek medical attention.

Skin Contact:

Generally non-irritating. If irritation occurs from contact with coating, wash the affected area with soap and water.

Eye Contact:

Flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids. If dust particles are present, do not rub eyes, as the grit may cause corneal abrasion. Seek medical attention if irritation persists.

Ingestion:

Not a likely route of exposure for a solid sheet. If pieces are swallowed, do not induce vomiting unless directed by medical personnel. Seek medical advice.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed

Acute: Dust may cause abrasive irritation to the eyes or mechanical irritation to the respiratory tract.

Delayed: Repeated inhalation of dust/fibers (if the sheet is pulverized) could lead to long-term lung issues.

4.3 Indication of any Immediate Medical Attention and Special Treatment Needed

Treat symptomatically. No specific antidote is required.

Section 5. Fire-Fighting Measures

5.1 Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 Hazardous Combustion Products

Titanium oxides, sodium oxides, oxides of phosphorus, carbon oxides, hydrogen fluoride

5.3 Advice for Firefighters

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

5.4 Other Information

No Data Available

Section 6. Accidental Release Measures

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and Materials for Containment and Cleaning Up

Pick up and arrange disposal without creating dust. If the "release" involves crushed or pulverized electrode material, use an N95 or P100 respirator to prevent inhalation of dust. Keep in closed containers for disposal.

6.4 Reference to Other Sections

For personal protection, see section 8; for disposal see Section 13.

Section 7. Handling and Storage

7.1 Precautions for Safe Handling

Appropriate personal protective equipment should be used at all times. Avoid contact with eyes and skin. Even though the material is bound, trace surface dust may be present. Handle in a dry and well-ventilated area. Avoid actions that abrade, sand, or grind the coated surface. Such actions can release respirable dust. Wash hands thoroughly after handling electrode materials, even if gloves were worn. Do not eat, drink, or smoke in areas where electrodes are handled or processed. See Section 2.2 for precautions.

7.2 Conditions for Safe Storage (including any incompatibilities)

Store in a dry and well-ventilated place. Avoid moisture (humidity). Store sheets flat to prevent flaking or delamination of the coating from the substrate.

7.3 Specific End Uses

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8. Exposure Controls/Personal Protection

8.1 Control Parameters

Components with workplace control parameters:

Component	OSHA PEL (TWA)	ACGIH TLV (TWA)	NIOSH REL (TWA)
Carbon Black	3.5 mg/m^3	3 mg/m^3 (inhalable)	3.5 mg/m3

**PEL - Permissible Exposure Limit; TWA - Time-Weighted Average; TLV - Threshold Limit Value; REL - Recommended Exposure Limit*

8.2 Exposure Controls

Appropriate Engineering Controls

Handle in accordance with good industrial hygiene and safety practice. **Processing (Cutting/Slitting):** If generating dust, use a HEPA-filtered fume hood or local exhaust ventilation (LEV). Because the dust is conductive, ensure that the vacuum/exhaust system is rated for conductive dust to prevent motor fires.

Personal Protective Equipment

Respiratory Protection

Not required for normal handling of electrode sheets. If the sheets are damaged or dust is created outside of a fume hood, use an N95 or P100 respirator.

Eye / Face Protection

Safety glasses with side shields are recommended when cutting sheets or if dust is present.

Hand Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wear long sleeves to prevent conductive dust from settling on the skin. Wash and dry hands.

Recommendation: Nitrile rubber (minimum 4 mil thickness)

Recommendations are advisory only and must be evaluated by an industrial hygienist & safety officer familiar with the specific situation of anticipated use. It should not be construed as offering an approval for any specific use scenario.

Skin and Body Protection

A standard lab coat is recommended. Contaminated clothing should be laundered separately.

Control of Environmental Exposure

Do not let product enter drains. Discharge into the environment must be avoided.

Section 9. Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Appearance:	Black solid coating on foil
Odor:	Odorless
Odor Threshold:	Not Applicable
pH:	Not applicable
Melting / Freezing Point:	Copper Foil: ~1,085 °C; Carbon Black: > 3000 °C (sublimes); PVDF: 165-172 °C
Initial Boiling Point / Range:	Not Applicable
Flash Point:	Not Applicable
Evaporation Rate:	Not Applicable
Flammability (solid, gas):	Non-flammable
Upper/Lower Explosion Limit:	Not Applicable
Vapor Pressure:	Not Applicable
Vapor Density:	Not Applicable
Relative Density:	No Data Available
Solubility:	Not Applicable
Partition Coefficient:	Not Applicable
Auto-ignition Temperature:	Coating layer (Carbonaceous): > 450 °C
Decomposition Temperature:	PVDF: ≥ 350 °C
Viscosity:	Not Applicable
Particle Characteristics:	Not Applicable (solid, bound sheet)

9.2 Other Safety Information

Carbon black as dust is combustible

Section 10. Stability and Reactivity

10.1 Reactivity

Not reactive under normal conditions of storage, handling, and processing.

10.2 Chemical Stability

Stable under recommended storage conditions (15 – 25 °C, low humidity).

10.3 Possibility of Hazardous Reactions

Thermal degradation (releasing toxic/corrosive hydrogen fluoride gas), dust combustion hazards, and chemical reactivity risks with strong oxidizers, acids, and alkali metals

10.4 Conditions to Avoid

Avoid excessive heat (> 150 – 200 °C), mechanical abrasion (generates respirable dust), moisture

10.5 Incompatible Materials

Strong acids, strong bases, strong oxidizing agents, alkali metals

10.6 Hazardous Decomposition Products

Under fire conditions or extreme thermal duress, the following may be released:

Titanium oxides, sodium oxides, oxides of phosphorus, carbon oxides, hydrogen fluoride gas

Section 11. Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity

Not classified for electrode sheets. If dust is generated, it may cause irritation to the upper respiratory tract.

Skin corrosion/irritation

May cause irritation

Serious eye damage/eye irritation

Dust may cause irritation

Respiratory or skin sensitization

No data available for the mixture

Germ cell mutagenicity

No data available for the mixture

Carcinogenicity

Carbon Black: Classified by IARC as Group 2B (Possibly carcinogenic to humans) via inhalation.

Note: *These risks are associated with the inhalation of respirable particles, which are not present in the finished sheet.*

Reproductive toxicity

No data available for the mixture

Teratogenicity

No data available for the mixture

Specific target organ toxicity - single exposure (Globally Harmonized System)

No data available for the mixture

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

No data available for the mixture

Aspiration hazard

Not applicable

Additional Information

Routes of exposure: Inhalation (as dust), Skin Contact (direct contact), Eye Contact (as dust)

Under normal conditions of use & handling, physical hazards and health risks are not applicable due to physical form of the product. **Note:** Mechanical processing such as grinding, sanding, or laser cutting of the dry coating may generate respirable dust. In such cases, the hazards of the raw constituents may apply.

Section 12. Ecological Information

12.1 Toxicity

Mechanically chemically inert in water - does not pose an acute or chronic aquatic toxicity hazard.

Carbon Black: LC50 / EC50 (Fish, Daphnia, Algae) > 100 mg/L (non-toxic)

12.2 Persistence and Degradability

Carbon Black – inorganic and entirely non-biodegradable; persists indefinitely in soil or sediment as stable mineral matter.

PVDF – highly persistent in the environment; does not undergo microbial or chemical degradation.

12.3 Bioaccumulative Potential

Carbon, Carbon Black, & PVDF – do not bioaccumulate

12.4 Mobility in Soil

Mobility is zero in electrode sheet form.

12.5 Results of PBT and vPvB Assessment

This mixture does not meet the criteria for classification as PBT (Persistent, Bioaccumulative, and Toxic) or vPvB (very Persistent and very Bioaccumulative).

12.6 Other Adverse Effects

Environmental Handling – do not allow scrap pieces or pulverized dust to enter stormwater drains, waterways, or soil.

Section 13. Disposal Considerations

13.1 Waste Treatment Methods – Product

This material should not be disposed of into municipal waste streams or environmental systems. Whenever possible, collect and segregate manufacturing scrap, off-cuts, and unused electrode sheets for authorized battery recycling or material recovery.

13.2 Waste Treatment Methods – Contaminated Packaging

Dispose of outer packaging in accordance with local, regional, and national regulations.

Section 14. Transport Information

14.1 Department of Transportation (DOT - US)

Not classified as a dangerous good under transport regulations

14.2 International Maritime Dangerous Goods (IMDG)

Not classified as a dangerous good under transport regulations

14.3 International Air Transport Association (IATA)

Not classified as a dangerous good under transport regulations

14.4 Other

HS Classification #: 8507.90 **Schedule B #:** 8507.90.8000

Section 15. Regulatory Information

15.1 US Federal Regulations

SARA 302 Components

No components are subject to the reporting requirements of SARA Title III, Section 302 / 40 CFR 355.

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

As a solid roll/sheet: No Physical or Health Hazards

If dust is generated during processing: Carcinogenicity (Carbon Black), Combustible Dust

Toxic Substances Control Act (TSCA) Chemical Substance Inventory

Active: Poly(vinylidene fluoride) (CAS #24937-79-9); Carbon Black (CAS #1333-86-4), Copper Foil (CAS #7440-50-8)

Note: *As a manufactured article, the finished sheet itself is generally exempt from TSCA reporting, but the chemical constituents are fully compliant.*

15.2 US State Regulations

US State Right to Know (RTK) Components

New Jersey, Pennsylvania, Massachusetts, Minnesota, and Rhode Island require the following components to be listed:

Carbon Paper (CAS #7440-44-0); Poly(vinylidene fluoride) (CAS #24937-79-9); Carbon Black (CAS #1333-86-4)

California Proposition 65

Warning: this product can expose you to Carbon Black, which is known to the State of California to cause cancer.

Note: *This warning is only applicable if processing (such as grinding or shredding) generates free, respirable dust. As a manufactured article, the finished sheet itself is not respirable.*

15.3. International Regulations

EU REACH (Registration, Evaluation, Authorization and Restriction of Chemicals)

Article Status: This product meets the definition of an "Article" under REACH (Regulation (EC) No 1907/2006). There is no intended release of chemical substances from the sheet under normal conditions of use.

SVHC (Substances of Very High Concern): None of the components are present on the European Chemicals Agency (ECHA) Candidate List of SVHCs above the 0.1% w/w threshold.

RoHS Directive (Restriction of Hazardous Substances):

This product complies with EU Directive 2011/65/EU (RoHS 2) and its amendments. It does not contain restricted heavy metals or regulated brominated flame retardants above permissible limits.

Section 16. Other Information

Rating System	Health	Flammability	Physical Hazard / Instability	Special
NFPA 704	1	1	0	None
HMIS	1*	1	0	E

**Chronic Health Hazard (applies to potential long-term inhalation of airborne carbon black dust only).*

HMIS PPE Code E: Safety glasses, gloves, and dust respirator (if dust is generated).

Additional Notes

About NTP: A CAS number has not been assigned to Sodium Titanium Phosphate ($NaTi_2(PO_4)_3$). Insufficient toxicological and safety data exists to fully assess the hazards of this material. This lack of information does not imply the absence of hazards. Undocumented or unforeseen health and safety risks may be present if dust is generated. Handle with care and utilize appropriate safety precautions.

REACH Number: Registration not required (volume < 1 tpa)

Unlisted Abbreviations: ACGIH: American Conference of Governmental Industrial Hygienists; **CAS:** Chemical Abstracts Service; **HMIS:** Hazardous Materials Identification System; **NFPA:** National Fire Protection Association; **NIOSH:** National Institute for Occupational Safety and Health; **OSHA:** Occupational Safety and Health Administration

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