



Water-Based Polyurethane Top Coat 211NF "A" White

Superior Manufacturing

Version No: 2.2

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

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S.GHS.USA.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	Water-Based Polyurethane Top Coat 211NF "A" White
Synonyms	Not Available
Other means of identification	Not Available

Recommended use of the chemical and restrictions on use

Relevant identified uses	Specialty Flooring Resin
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Superior Manufacturing
Address	4520 Glenmeade Lane Auburn Hills, MI 48326 United States
Telephone	866.523.5677
Fax	Not Available
Website	www.ordersuperior.com
Email	info@ordersuperior.com

Emergency phone number

Association / Organisation	INFOTRAC
Emergency telephone numbers	1-800-535-5053
Other emergency telephone numbers	

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Acute Aquatic Hazard Category 3, Serious Eye Damage Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Skin Corrosion/Irritation Category 2, Carcinogenicity Category 1A, Skin Sensitizer Category 1, Chronic Aquatic Hazard Category 3
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Label elements

Hazard pictogram(s)	
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SIGNAL WORD	DANGER
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Hazard statement(s)

H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H315	Causes skin irritation.
H350	May cause cancer.
H317	May cause an allergic skin reaction.

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H412	Harmful to aquatic life with long lasting effects.
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Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) General

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood
P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P280	Wear protective gloves/protective clothing/eye protection/face protection
P271	Use only outdoors or in a well-ventilated area.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P308+P313	IF exposed or concerned: Get medical advice/attention.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
102-71-6	30-40	<u>triethanolamine</u>
64771-71-7	1-5	<u>paraffins, petroleum, normal C>10</u>
29911-28-2	1-5	<u>dipropylene glycol mono-n-butyl ether - alpha isomer</u>
13463-67-7	20-25	<u>titanium dioxide</u>
21645-51-2	<2	<u>aluminium hydroxide</u>
7631-89-2	<2	<u>sodium arsenate</u>

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 FIRST-AID MEASURES**Description of first aid measures**

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. <p>For amines:</p> <ul style="list-style-type: none"> ▶ If liquid amines come in contact with the eyes, irrigate immediately and continuously with low pressure flowing water, preferably from an eye wash fountain, for 15 to 30 minutes. ▶ For more effective flushing of the eyes, use the fingers to spread apart and hold open the eyelids. The eyes should then be "rolled" or moved in all directions. ▶ Seek immediate medical attention, preferably from an ophthalmologist.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation. <p>For amines:</p> <ul style="list-style-type: none"> ▶ In case of major exposure to liquid amine, promptly remove any contaminated clothing, including rings, watches, and shoe, preferably under a safety shower. ▶ Wash skin for 15 to 30 minutes with plenty of water and soap. Call a physician immediately.

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	<ul style="list-style-type: none"> ▶ Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. ▶ Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing. ▶ Discard contaminated leather articles such as shoes, belts, and watchbands. ▶ Note to Physician: Treat any skin burns as thermal burns. After decontamination, consider the use of cold packs and topical antibiotics.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. <p>For amines:</p> <ul style="list-style-type: none"> ▶ All employees working in areas where contact with amine catalysts is possible should be thoroughly trained in the administration of appropriate first aid procedures. ▶ Experience has demonstrated that prompt administration of such aid can minimize the effects of accidental exposure. ▶ Promptly move the affected person away from the contaminated area to an area of fresh air. ▶ Keep the affected person calm and warm, but not hot. ▶ If breathing is difficult, oxygen may be administered by a qualified person. ▶ If breathing stops, give artificial respiration. Call a physician at once.
Ingestion	<ul style="list-style-type: none"> ▶ Immediately give a glass of water. ▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. <p>For amines:</p> <ul style="list-style-type: none"> ▶ If liquid amine are ingested, have the affected person drink several glasses of water or milk. ▶ Do not induce vomiting. ▶ Immediately transport to a medical facility and inform medical personnel about the nature of the exposure. The decision of whether to induce vomiting should be made by an attending physician.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

For acute or short-term repeated exposures to highly alkaline materials:

- ▶ Respiratory stress is uncommon but present occasionally because of soft tissue edema.
- ▶ Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
- ▶ Oxygen is given as indicated.
- ▶ The presence of shock suggests perforation and mandates an intravenous line and fluid administration.
- ▶ Damage due to alkaline corrosives occurs by liquefaction necrosis whereby the saponification of fats and solubilisation of proteins allow deep penetration into the tissue.

Alkalis continue to cause damage after exposure.

INGESTION:

- ▶ Milk and water are the preferred diluents

No more than 2 glasses of water should be given to an adult.

- ▶ Neutralising agents should never be given since exothermic heat reaction may compound injury.

* Catharsis and emesis are absolutely contra-indicated.

* Activated charcoal does not absorb alkali.

* Gastric lavage should not be used.

Supportive care involves the following:

- ▶ Withhold oral feedings initially.
- ▶ If endoscopy confirms transmucosal injury start steroids only within the first 48 hours.
- ▶ Carefully evaluate the amount of tissue necrosis before assessing the need for surgical intervention.
- ▶ Patients should be instructed to seek medical attention whenever they develop difficulty in swallowing (dysphagia).

SKIN AND EYE:

- ▶ Injury should be irrigated for 20-30 minutes.

Eye injuries require saline. [Ellenhorn & Barceloux: Medical Toxicology]

For amines:

- ▶ Certain amines may cause injury to the respiratory tract and lungs if aspirated. Also, such products may cause tissue destruction leading to stricture. If lavage is performed, endotracheal and/or esophagoscopy control is suggested.

- ▶ No specific antidote is known.

- ▶ Care should be supportive and treatment based on the judgment of the physician in response to the reaction of the patient.

Laboratory animal studies have shown that a few amines are suspected of causing depletion of certain white blood cells and their precursors in lymphoid tissue. These effects may be due to an immunosuppressive mechanism.

Some persons with hyperreactive airways (e.g., asthmatic persons) may experience wheezing attacks (bronchospasm) when exposed to airway irritants.

Lung injury may result following a single massive overexposure to high vapour concentrations or multiple exposures to lower concentrations of any pulmonary irritant material.

Health effects of amines, such as skin irritation and transient corneal edema ("blue haze," "halo effect," "glauropsia"), are best prevented by means of formal worker education, industrial hygiene monitoring, and exposure control methods. Persons who are highly sensitive to the triggering effect of non-specific irritants should not be assigned to jobs in which such agents are used, handled, or manufactured.

Medical surveillance programs should consist of a pre-placement evaluation to determine if workers or applicants have any impairments (e.g., hyperreactive airways or bronchial asthma) that would limit their fitness for work in jobs with potential for exposure to amines. A clinical baseline can be established at the time of this evaluation.

Periodic medical evaluations can have significant value in the early detection of disease and in providing an opportunity for health counseling.

Medical personnel conducting medical surveillance of individuals potentially exposed to polyurethane amine catalysts should consider the following:

- ▶ Health history, with emphasis on the respiratory system and history of infections
- ▶ Physical examination, with emphasis on the respiratory system and the lymphoreticular organs (lymph nodes, spleen, etc.)
- ▶ Lung function tests, pre- and post-bronchodilator if indicated
- ▶ Total and differential white blood cell count
- ▶ Serum protein electrophoresis

Persons who are concurrently exposed to isocyanates also should be kept under medical surveillance.

Pre-existing medical conditions generally aggravated by exposure include skin disorders and allergies, chronic respiratory disease (e.g. bronchitis, asthma, emphysema), liver disorders, kidney disease, and eye disease.

Broadly speaking, exposure to amines, as characterised by amine catalysts, may cause effects similar to those caused by exposure to ammonia. As such, amines should be considered potentially injurious to any tissue that is directly contacted.

Inhalation of aerosol mists or vapors, especially of heated product, can result in chemical pneumonitis, pulmonary edema, laryngeal edema, and delayed scarring of the airway or other affected organs. There is no specific treatment.

Clinical management is based upon supportive treatment, similar to that for thermal burns.

Persons with major skin contact should be maintained under medical observation for at least 24 hours due to the possibility of delayed reactions.

Polyurethane Amine Catalysts: Guidelines for Safe Handling and Disposal Technical Bulletin June 2000

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Alliance for Polyurethanes Industry

Treat symptomatically.

For acute or short term repeated exposures to arsenic, soluble compounds: Treat as per arsenic poisoning.

- ▶ Acute skin lesions such as contact dermatitis usually do not require other treatment than removal from exposure.
- ▶ If more severe symptoms of the respiratory system, the skin or the gastro-intestinal tract occur, British Anti-Lewisite (BAL, dimercaprol) may be given. Prompt administration in such cases is vital; to obtain maximum benefit such treatment should be administered within 4 hours of poisoning.
- ▶ In addition, general treatment such as prevention of further absorption from the gastro-intestinal tract are mandatory.
- ▶ General supportive therapy such as maintenance of respiration and circulation, maintenance of water and electrolyte balance and control of nervous system effects, as well as elimination of absorbed poison through dialysis and exchange transfusion, may be used if feasible.
- ▶ Dimercaprol is given by deep intramuscular injection as a 5% solution in peanut oil (or a 10% solution with benzyl-benzoate in vegetable oil). It is usually given in a dose of 3 mg/kg, 4-hourly, for the first two days, or twice daily for up to seven days. [ILO Encyclopedia]
- ▶ BAL Therapy is effective for haematological manifestations of chronic arsenic poisoning but not for neurological symptoms. Watch for side effects (e.g. urticaria, burning sensation in the lips, mouth and throat, fever, conjunctivitis etc).
- ▶ Some relief results from administration of diphenhydramine (Benadryl) (1.5 mg/kg intramuscularly or by mouth every 6 hour). [Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI (Notice of Intent to Establish)

BEIs represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the

Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Inorganic arsenic metabolites in urine	35 ug/gm creatinine	End of workweek	B

B: Background levels occur in specimens collected from subjects **NOT** exposed Consult specific documentation.

* Preplacement and periodic medical examinations are essential for workers exposed to arsenic on a regular basis. Preplacement physical examinations should give particular attention to allergic and chronic skin lesions, eye disease, psoriasis, chronic eczematous dermatitis, hyperpigmentation of the skin, keratosis and warts, baseline weight, baseline blood and haemoglobin counts, baseline urinary arsenic determinations.

Annual physical examinations should give attention to general health, weight, skin condition, and any evidence of excessive exposure or absorption of arsenic

For acute and short term repeated exposures:

Treat as for arsenic poisoning. Prompt administration is essential.

- ▶ General treatment for prevention of further absorption is essential. British anti-lewisite (BAL, dimercaprol, 2,3 dimercaptopropanol) may be given as a deep intramuscular injection, as 5% in oil, or as 10% in benzoyl benzoate - vegetable oil. Dose may be 3 mg/kg at 4 hours for first two days, then at 6 hours for third day, then once or twice daily.
- ▶ Supportive therapy is maintenance of water and electrolyte balance and control of CNS effects.
- ▶ Elimination of absorbed poison by dialysis and exchange transfusion may be required.

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- ▶ Foam.
- ▶ Dry chemical powder.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Special protective equipment and precautions for fire-fighters

Fire Fighting	<p>For amines:</p> <ul style="list-style-type: none"> ▶ For firefighting, cleaning up large spills, and other emergency operations, workers must wear a self-contained breathing apparatus with full face-piece, operated in a pressure-demand mode. ▶ Airline and air purifying respirators should not be worn for firefighting or other emergency or upset conditions. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. <p>Combustion products include: carbon dioxide (CO₂) nitrogen oxides (NO_x) arsenic compounds other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	<p>Environmental hazard - contain spillage.</p> <p>for amines:</p> <ul style="list-style-type: none"> ▶ If possible (i.e., without risk of contact or exposure), stop the leak. ▶ Contain the spilled material by diking, then neutralize. <p>Slippery when spilt.</p>
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	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately.
Major Spills	<p>Environmental hazard - contain spillage.</p> <p>For amines:</p> <ul style="list-style-type: none"> ▶ First remove all ignition sources from the spill area. ▶ Have firefighting equipment nearby, and have firefighting personnel fully trained in the proper use of the equipment and in the procedures used in fighting a chemical fire. <p>Slippery when spilt.</p> <ul style="list-style-type: none"> ▶ Absorb or contain isothiazolinone liquid spills with sand, earth, inert material or vermiculite. ▶ The absorbent (and surface soil to a depth sufficient to remove all of the biocide) should be shovelled into a drum and treated with an 11% solution of sodium metabisulfite (Na₂S₂O₅) or sodium bisulfite (NaHSO₃), or 12% sodium sulfite (Na₂SO₃) and 8% hydrochloric acid (HCl).

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<p>Alkanolamines and iron may produced unstable complexes. Monoethanolamine (MEA) and iron form a trisethanolamino-iron complex.</p> <ul style="list-style-type: none"> ▶ Electrostatic discharge may be generated during pumping - this may result in fire. ▶ Ensure electrical continuity by bonding and grounding (earthing) all equipment. ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ DO NOT allow clothing wet with material to stay in contact with skin
Other information	<ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<ul style="list-style-type: none"> ▶ Violent reaction and fire may result when amine catalysts are exposed to, or mixed with, oxidizing agents such as perchlorates, nitrates, permanganates, chromates, nitric acid, halogens, peroxides, and some cleaning solutions containing acids. ▶ The large amount of heat generated by the reaction of the catalyst with the oxidizing agent may be sufficient to cause vigorous boiling, which can cause the hot material to splash or splatter. <p>Triethanolamine:</p> <ul style="list-style-type: none"> ▶ is an organic base ▶ reacts violently with strong oxidisers, permanganates, peroxides, ammonium persulfate, bromine dioxide, sulfuric acid, nitric acid ▶ is incompatible with organic anhydrides, acrylates, alcohols, aldehydes, alkylene oxides, substituted allyls, cellulose nitrate, cresols, caprolactam solution, epichlorohydrin, ethylene dichloride, isocyanates, ketones, glycols, mercury, nitrates, phenols, vinyl acetate ▶ decomposes exothermically with maleic anhydride ▶ increase the explosive sensitivity of nitromethane ▶ corrodes, aluminium, copper, its alloys, tin, zinc <p>Titanium dioxide</p> <ul style="list-style-type: none"> ▶ reacts with strong acids, strong oxidisers ▶ reacts violently with aluminium, calcium, hydrazine, lithium (at around 200 deg C.), magnesium, potassium, sodium, zinc, especially at elevated temperatures - these reactions involves reduction of the oxide and are accompanied by incandescence ▶ dust or powders can ignite and then explode in a carbon dioxide atmosphere ▶ WARNING: Avoid or control reaction with peroxides. All <i>transition metal</i> peroxides should be considered as potentially explosive. <p>Diethanolamine:</p> <ul style="list-style-type: none"> ▶ reacts vigorously with strong oxidisers ▶ reacts with aldehydes, ketones, acrylates, formates, oxalates, nitrites, non-oxidising mineral acids, strong acids, organic acids, organic anhydrides, isocyanates, vinyl acetate, acrylates, substituted allyls, alkylene oxides, epichlorohydrin, ▶ may undergo self-sustaining thermal decomposition at temperatures above 250 C ▶ attacks aluminium, copper, zinc and their alloys, and galvanised iron <p>Monoethanolamine</p> <ul style="list-style-type: none"> ▶ is a strong organic base ▶ reacts violently with strong oxidisers, strong acids (with spattering) ▶ is incompatible with acetic acid, acetic anhydride, acrolein, acrylates, acrylic acid, acrylonitrile, alcohols, aldehydes, alkali metals, alkylene oxides, substituted allyls, caprolactam solution, cellulose nitrate, chlorosulfonic acid, cresols, epichlorohydrin, glycols, halogenated hydrocarbons, isocyanates, ketones, mesityl oxide, oleum, organic anhydrides, phenols, beta-propiolactone, vinyl acetate ▶ forms explosive mixture with sodium perchlorate ▶ reacts with iron forming tris-ethanolamineiron ▶ may undergo a self-sustaining thermal decomposition when heated in excess of 250 degrees C ▶ attacks aluminium, copper, lead, tin, zinc, and their alloys ▶ attacks plastics, coatings an rubber <ul style="list-style-type: none"> ▶ Avoid contact with copper, aluminium and their alloys. ▶ Arsine, an extremely poisonous (lethal) gas with a garlic odour can be generated when the material reacts with acids, alkalis or water in the presence of an active metal (zinc, aluminium, magnesium, sodium, iron etc.). ▶ Avoid strong acids, bases. ▶ Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

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INGREDIENT DATA


Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	triethanolamine	Triethanolamine	5 mg/m ³	Not Available	Not Available	TLV® Basis: Eye & skin irr; BEIA
US NIOSH Recommended Exposure Limits (RELs)	titanium dioxide	Rutile, Titanium oxide, Titanium peroxide	Not Available	Not Available	Not Available	Ca See Appendix A
US ACGIH Threshold Limit Values (TLV)	titanium dioxide	Titanium dioxide	10 mg/m ³	Not Available	Not Available	TLV® Basis: LRT irr
US OSHA Permissible Exposure Levels (PELs) - Table Z1	titanium dioxide	Titanium dioxide: Total dust	15 mg/m ³	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	aluminium hydroxide	Synonyms vary depending upon the specific aluminium compound.	2 mg/m ³	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	aluminium hydroxide	Synonyms vary depending upon the specific aluminium compound.	5 mg/m ³	Not Available	Not Available	Not Available
US ACGIH Threshold Limit Values (TLV)	aluminium hydroxide	Aluminum metal and insoluble compounds	1 mg/m ³	Not Available	Not Available	TLV® Basis: Pneumoconiosis; LRT irr; neurotoxicity
US OSHA Permissible Exposure Levels (PELs) - Table Z1	aluminium hydroxide	Particulates not otherwise regulated (PNOR): Total dust	15 mg/m ³	Not Available	Not Available	(f) All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3.
US ACGIH Threshold Limit Values (TLV)	sodium arsenate	Arsenic and inorganic compounds, as As	0.01 mg/m ³	Not Available	Not Available	TLV® Basis: Lung cancer; BEI
US OSHA Permissible Exposure Levels (PELs) - Table Z1	sodium arsenate	Arsenic, inorganic compounds (as As)	Not Available	Not Available	Not Available	see 1910.1018

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
triethanolamine	Triethanolamine; (Trihydroxytriethylamine)	15 mg/m ³	240 mg/m ³	1,500 mg/m ³
titanium dioxide	Titanium oxide; (Titanium dioxide)	30 mg/m ³	330 mg/m ³	2,000 mg/m ³
aluminium hydroxide	Aluminum hydroxide	8.7 mg/m ³	73 mg/m ³	440 mg/m ³
sodium arsenate	Sodium arsenate	4.1 mg/m ³	45 mg/m ³	270 mg/m ³

Ingredient	Original IDLH	Revised IDLH
triethanolamine	Not Available	Not Available
paraffins, petroleum, normal C>10	Not Available	Not Available
dipropylene glycol mono-n-butyl ether - alpha isomer	Not Available	Not Available
titanium dioxide	5,000 mg/m ³	Not Available
aluminium hydroxide	Not Available	Not Available
sodium arsenate	5 mg/m ³	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Personal protection	
Eye and face protection	<p>For amines: SPECIAL PRECAUTION:</p> <ul style="list-style-type: none"> ▶ Because amines are alkaline materials that can cause rapid and severe tissue damage, wearing of contact lenses while working with amines is strongly discouraged. Wearing such lenses can prolong contact of the eye tissue with the amine, thereby causing more severe damage. ▶ Safety glasses with side shields. ▶ Chemical goggles.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>For amines:</p> <ul style="list-style-type: none"> ▶ Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly.

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	<ul style="list-style-type: none"> ▶ Butyl rubber gloves ▶ Nitrile rubber gloves
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C.

Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

Where engineering controls are not feasible and work practices do not reduce airborne amine concentrations below recommended exposure limits, appropriate respiratory protection should be used. In such cases, air-purifying respirators equipped with cartridges designed to protect against amines are recommended.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Appearance	Not Available		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION**Information on toxicological effects**

Inhaled	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. The material has NOT been classified by EC Directives or other classification systems as "harmful by inhalation". This is because of the lack of corroborating animal or human evidence.</p> <p>Inhaling materials containing arsenic can cause severe irritation to the nose, throat and lungs. Prolonged exposure can cause severe structural damage to the nose.</p> <p>Rats exposed to triethanolamine for six hours showed no abnormality.</p> <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.</p>
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Water-Based Polyurethane Top Coat 211NF "A" White

Ingestion	<p>Symptoms of acute poisoning by arsenic ingestion, which develop within 4 hours include epigastric pain, vomiting and watery diarrhoea, nausea and vomiting. Blood may appear in vomitus and stools.</p> <p>The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.</p> <p>Taken by mouth, isothiazolinones have moderate to high toxicity. The major signs of toxicity are severe stomach irritation, lethargy, and inco-ordination.</p> <p>Dusts of titanium and titanium compounds are thought to exhibit little or no toxic effects.</p> <p>Ingestion of triethanolamine may cause gastro-intestinal irritation with bleeding, burning or painful sensations in the mouth, throat, chest and abdomen, vomiting and diarrhoea. Animal testing has also shown sluggishness, excessive tear secretion, hairs standing up, unsteady gait, and red/brown discharge on hair around the nose and genitals.</p> <p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p>
Skin Contact	<p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>A 0.5% solution of 1,2-benzisothiazoline-3-one (BIT) is irritating to the skin. Even 0.05% can cause allergy, according to patch tests, with reddening of the skin.</p> <p>Solutions of isothiazolinones may be irritating or even damaging to the skin, depending on concentration. A concentration of over 0.1% can irritate, and over 0.5% can cause severe irritation.</p> <p>Arsenic can cause skin irritation characterised by eczema, scaling, sensitisation as well as discoloration and thickening of the palms and soles.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Skin exposure to triethanolamine may cause slight irritation with itching, local redness, swelling and tissue destruction, sensitisation (in a small proportion of individuals), and reddened blisters. Exposure of animals to toxic levels of triethanolamine may cause sluggishness, unsteady gait, emaciation and discoloration of body organs.</p> <p>Skin contact with the material may be harmful; systemic effects may result following absorption.</p> <p>The material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p>
Eye	<p>If applied to the eyes, this material causes severe eye damage.</p> <p>Solutions containing isothiazolinones may damage the mucous membranes and cornea. Animal testing showed very low concentrations (under 0.1%) did not cause irritation, while higher levels (3-5.5%) produced severe irritation and damage to the eye.</p>
Chronic	<p>Studies show that inhaling this substance for over a long period (e.g. in an occupational setting) may increase the risk of cancer.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>Subacute and chronic exposure to arsenic and its organic salts may produce loss of appetite, nausea and vomiting, low grade fever, persistent headache, pallor, weakness and catarrhal inflammation. Lesions in the mouth and salivation are common.</p> <p>Prolonged or chronic exposure to alkanolamines may result in liver, kidney or nervous system injury. Repeated inhalation may aggravate asthma and lung disease involving inflammation or scarring.</p> <p>In animal testing, 1,2-benzisothiazoline-3-one (BIT) did not cause toxicity to the embryo or birth defects. The material does not cause mutations or an increase in cancer.</p> <p>The isothiazolinones are known contact sensitizers. Sensitisation is more likely with the chlorinated species as opposed to the non-chlorinated species.</p> <p>Long term exposure to titanium and several of its compounds produces lung scarring and chronic bronchitis. Breathing is impaired and cardiac changes with right heart enlargements occur.</p> <p>There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment.</p> <p>Triethanolamine is reported to cause reversible kidney and liver damage but not cancer or foetal toxicity. However, its reaction with nitrites and nitrous acid may produce potent cancer causing agent - N-nitrosodiethanolamine.</p>

Poly 501 "A" White	<table border="1"> <thead> <tr> <th data-bbox="376 1440 930 1462">TOXICITY</th> <th data-bbox="930 1440 1487 1462">IRRITATION</th> </tr> </thead> <tbody> <tr> <td data-bbox="376 1473 930 1496">Not Available</td> <td data-bbox="930 1473 1487 1496">Not Available</td> </tr> </tbody> </table>	TOXICITY	IRRITATION	Not Available	Not Available														
TOXICITY	IRRITATION																		
Not Available	Not Available																		
triethanolamine	<table border="1"> <thead> <tr> <th data-bbox="376 1529 938 1552">TOXICITY</th> <th data-bbox="938 1529 1487 1552">IRRITATION</th> </tr> </thead> <tbody> <tr> <td data-bbox="376 1563 938 1597">dermal (rat) LD50: >2000 mg/kg^[2]</td> <td data-bbox="938 1563 1487 1597">Eye (rabbit): 0.1 ml -</td> </tr> <tr> <td data-bbox="376 1608 938 1641">Oral (rat) LD50: 4190 mg/kg^[2]</td> <td data-bbox="938 1608 1487 1641">Eye (rabbit): 10 mg - mild</td> </tr> <tr> <td></td> <td data-bbox="938 1653 1487 1686">Eye (rabbit): 5.62 mg - SEVERE</td> </tr> <tr> <td></td> <td data-bbox="938 1697 1487 1731">minor conjunctival irritation</td> </tr> <tr> <td></td> <td data-bbox="938 1742 1487 1776">no irritation *</td> </tr> <tr> <td></td> <td data-bbox="938 1787 1487 1821">Skin (human): 15 mg/3d (int)-mild</td> </tr> <tr> <td></td> <td data-bbox="938 1832 1487 1865">Skin (rabbit): 4 h occluded</td> </tr> <tr> <td></td> <td data-bbox="938 1877 1487 1910">Skin (rabbit): 560 mg/24 hr- mild</td> </tr> </tbody> </table>	TOXICITY	IRRITATION	dermal (rat) LD50: >2000 mg/kg ^[2]	Eye (rabbit): 0.1 ml -	Oral (rat) LD50: 4190 mg/kg ^[2]	Eye (rabbit): 10 mg - mild		Eye (rabbit): 5.62 mg - SEVERE		minor conjunctival irritation		no irritation *		Skin (human): 15 mg/3d (int)-mild		Skin (rabbit): 4 h occluded		Skin (rabbit): 560 mg/24 hr- mild
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paraffins, petroleum, normal C>10	<table border="1"> <thead> <tr> <th data-bbox="376 1865 938 1888">TOXICITY</th> <th data-bbox="938 1865 1487 1888">IRRITATION</th> </tr> </thead> <tbody> <tr> <td data-bbox="376 1899 938 1933">Dermal (rabbit) LD50: >5000 mg/kg^[1]</td> <td data-bbox="938 1899 1487 1933">Eye : Mild</td> </tr> <tr> <td data-bbox="376 1944 938 1977">Oral (rat) LD50: >2000 mg/kg^[2]</td> <td data-bbox="938 1944 1487 1977">Skin : Mild</td> </tr> </tbody> </table>	TOXICITY	IRRITATION	Dermal (rabbit) LD50: >5000 mg/kg ^[1]	Eye : Mild	Oral (rat) LD50: >2000 mg/kg ^[2]	Skin : Mild												
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Water-Based Polyurethane Top Coat 211NF "A" White

titanium dioxide	TOXICITY	IRRITATION
	dermal (hamster) LD50: >=10000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral (rat) LD50: >2000 mg/kg ^[1]	Skin (human): 0.3 mg /3D (int)-mild * Skin: no adverse effect observed (not irritating) ^[1]
aluminium hydroxide	TOXICITY	IRRITATION
	Oral (rat) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
sodium arsenate	TOXICITY	IRRITATION
	Not Available	Not Available

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Poly 501 "A" White	Arsenic is a potent poison which exists in several forms. The inorganic form is more toxic than the organic.
TRIETHANOLAMINE	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Studies done show that triethanolamine is of low toxicity following high dose exposure by swallowing, skin contact or inhalation. It has not been shown to cause cancer, genetic defects, reproductive or developmental toxicity. 551teapcp The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing. NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA. Lachrymation, diarrhoea, convulsions, urinary tract changes, changes in bladder weight, changes in testicular weight, changes in thymus weight, changes in liver weight, dermatitis after systemic exposure, kidney, ureter, bladder tumours recorded. Equivocal tumourigen by RTECS criteria. Dermal rabbit value quoted above is for occluded patch in male or female animals * Union Carbide
PARAFFINS, PETROLEUM, NORMAL C>10	Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. * Lohr MSDS ** Aral MSDS
DIPROPYLENE GLYCOL MONO-N-BUTYL ETHER - ALPHA ISOMER	For propylene glycol ethers (PGEs): Typical propylene glycol ethers include propylene glycol n-butyl ether (PnB); dipropylene glycol n-butyl ether (DPnB); dipropylene glycol methyl ether acetate (DPMA) and tripropylene glycol methyl ether (TPM). Testing of a wide variety of propylene glycol ethers has shown that propylene glycol-based ethers are less toxic than some ethers of the ethylene series.
TITANIUM DIOXIDE	* IUCLID The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
SODIUM ARSENATE	WARNING: Sodium arsenate has been listed by IARC as Human Sufficient evidence but has not been assigned a Group class [RTECS 1980].
Poly 501 "A" White & TRIETHANOLAMINE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose.
Poly 501 "A" White & SODIUM ARSENATE	Arsenic compounds are classified by the European Union as toxic by inhalation and ingestion and toxic to aquatic life and long lasting in the environment. IARC classify arsenic in drinking water as a confirmed human carcinogen (IARC 1).
TRIETHANOLAMINE & TITANIUM DIOXIDE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
ALUMINIUM HYDROXIDE & SODIUM ARSENATE	No significant acute toxicological data identified in literature search.

Acute Toxicity	✗	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Continued...

Water-Based Polyurethane Top Coat 211NF "A" White

Poly 501 "A" White	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
triethanolamine	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	11-800mg/L	2
	EC50	48	Crustacea	609.88mg/L	2
	EC50	96	Algae or other aquatic plants	169mg/L	1
	EC0	24	Crustacea	1-530mg/L	2
NOEC	504	Crustacea	16mg/L	1	
paraffins, petroleum, normal C>10	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>1-mg/L	2
	EC50	48	Crustacea	>0.002mg/L	2
EC50	72	Algae or other aquatic plants	>10-mg/L	2	
dipropylene glycol mono-n-butyl ether - alpha isomer	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	139.478mg/L	3
	EC50	48	Crustacea	>100mg/L	2
	EC50	96	Algae or other aquatic plants	519mg/L	2
	EC0	48	Crustacea	>=100mg/L	2
NOEC	48	Crustacea	>1-mg/L	2	
titanium dioxide	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>1-mg/L	2
	EC50	48	Crustacea	>1-mg/L	2
	EC50	72	Algae or other aquatic plants	5.83mg/L	4
NOEC	336	Fish	0.089mg/L	4	
aluminium hydroxide	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.001-0.134mg/L	2
	EC50	48	Crustacea	0.7364mg/L	2
	EC50	72	Algae or other aquatic plants	0.001-0.05mg/L	2
NOEC	168	Crustacea	0.001-mg/L	2	
sodium arsenate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	7.28mg/L	4
	BCFD	1440	Fish	0.72mg/L	4
NOEC	2616	Algae or other aquatic plants	0.01302384mg/L	4	

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.

Speciation of arsenic is an important consideration in the fate, movement, and action of this substance. Chemical and biochemical transformations of arsenic include oxidation, reduction and methylation which affects its volatilisation, adsorption, dissolution and biological disposition.

Drinking Water Standards: hydrocarbon total: 10 ug/l (UK max.).

Environmental Fate: Isothiazolinones are antimicrobials used to control bacteria, fungi, and for wood preservation and antifouling agents. They are frequently used in personal care products such as shampoos and other hair care products, as well as certain paint formulations.

For triethanolamine:

Koc: 3 Half-life (hr) air: 4Henry's atm m3/mol: 3.38E-19BOD 5 if unstated: nil-0.17COD : 1.5ThOD : 2.04; 1.61 p/pThOD (measured) 1.52 mg/mg (Union Carbide)ThOD (calculated) 1.61 mg/mg (Union Carbide)BCF : <1Biodegradability: 96% DOC reduction (OECD Method 301E)BOD; Day 5: 8%, Day 10: 9%, Day 20: 66% Passes Sturm, AFNOR tests for biodegradability. Reaches more than 70% mineralisation in OECD test for inherent biodegradability (Zahn-Wellens test).

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethanolamine	LOW	LOW
dipropylene glycol mono-n-butyl ether - alpha isomer	HIGH	HIGH
titanium dioxide	HIGH	HIGH

Bioaccumulative potential

Continued...

Water-Based Polyurethane Top Coat 211NF "A" White

Ingredient	Bioaccumulation
triethanolamine	LOW (BCF = 3.9)
dipropylene glycol mono-n-butyl ether - alpha isomer	LOW (LogKOW = 1.1274)
titanium dioxide	LOW (BCF = 10)

Mobility in soil

Ingredient	Mobility
triethanolamine	LOW (KOC = 10)
dipropylene glycol mono-n-butyl ether - alpha isomer	LOW (KOC = 10)
titanium dioxide	LOW (KOC = 23.74)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. ▶ Recycle wherever possible. ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▶ Most polyurethane amine catalysts and their byproducts can be chemically or biologically degraded. ▶ Incineration is the preferred method of disposal; however, nitrogen oxide emission control may be required to meet current environmental regulations. <p>Drum Disposal</p> <ul style="list-style-type: none"> ▶ While the many laws, regulations, and ordinances governing the disposal of empty containers are varied and complex, one principle is common to all: the responsibility for the proper disposal of empty containers lies with the waste generator. ▶ Moreover, the waste generator is also responsible for any injury to health or environment caused by improper disposal. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
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Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

TRIETHANOLAMINE IS FOUND ON THE FOLLOWING REGULATORY LISTS

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US AIHA Workplace Environmental Exposure Levels (WEELs)
IMO IBC Code Chapter 17: Summary of minimum requirements	US Coast Guard, Department of Homeland Security Part 153: Ships Carrying Bulk Liquid, Liquefied gas or compressed gas hazardous materials. Table 1 to Part 153 --Summary of Minimum Requirements
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US Department of Homeland Security (DHS) - Chemical Facility Anti-Terrorism Standards (CFATS) - Chemicals of Interest
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US DOE Temporary Emergency Exposure Limits (TEELs)
US - California Permissible Exposure Limits for Chemical Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US ACGIH Threshold Limit Values (TLV)	US TSCA Chemical Substance Inventory - Interim List of Active Substances

PARAFFINS, PETROLEUM, NORMAL C>10 IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory	US TSCA Chemical Substance Inventory - Interim List of Active Substances
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DIPROPYLENE GLYCOL MONO-N-BUTYL ETHER - ALPHA ISOMER IS FOUND ON THE FOLLOWING REGULATORY LISTS

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US Chemical Footprint Project - Chemicals of High Concern List
IMO IBC Code Chapter 17: Summary of minimum requirements	US Clean Air Act - Hazardous Air Pollutants
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US DOT Coast Guard Bulk Hazardous Materials - List of Flammable and Combustible Bulk Liquid Cargoes
IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO	US EPCRA Section 313 Chemical List
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US TSCA Chemical Substance Inventory - Interim List of Active Substances

Continued...

Water-Based Polyurethane Top Coat 211NF "A" White

TITANIUM DIOXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

GESAMP/EHS Composite List - GESAMP Hazard Profiles	US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants
IMO IBC Code Chapter 17: Summary of minimum requirements	US ACGIH Threshold Limit Values (Spanish)
IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk	US ACGIH Threshold Limit Values (TLV)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US AIHA Workplace Environmental Exposure Levels (WEELs)
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)	US Chemical Footprint Project - Chemicals of High Concern List
US - Alaska Limits for Air Contaminants	US DOE Temporary Emergency Exposure Limits (TEELs)
US - California Proposition 65 - Carcinogens	US List of Active Substances Exempt from the TSCA Inventory Notifications (Active-Inactive) Rule
US - Hawaii Air Contaminant Limits	US NIOSH Recommended Exposure Limits (RELs)
US - Idaho - Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs) (Spanish)
US - Michigan Exposure Limits for Air Contaminants	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US - Oregon Permissible Exposure Limits (Z-1)	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US TSCA Section 12(b) - List of Chemical Substances Subject to Export Notification Requirements
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	US TSCA Section 5(a)(2) - Significant New Use Rules (SNURs)
US - Washington Permissible exposure limits of air contaminants	

ALUMINIUM HYDROXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US AIHA Workplace Environmental Exposure Levels (WEELs)
US - California Permissible Exposure Limits for Chemical Contaminants	US DOE Temporary Emergency Exposure Limits (TEELs)
US - Hawaii Air Contaminant Limits	US NIOSH Recommended Exposure Limits (RELs)
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs) (Spanish)
US - Oregon Permissible Exposure Limits (Z-1)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US - Washington Permissible exposure limits of air contaminants	US OSHA Permissible Exposure Limits - Annotated Table Z-3 (Spanish)
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US ACGIH Threshold Limit Values (Spanish)	US TSCA Chemical Substance Inventory - Interim List of Active Substances
US ACGIH Threshold Limit Values (TLV)	

SODIUM ARSENATE IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	US ACGIH Threshold Limit Values (TLV)
International Air Transport Association (IATA) Dangerous Goods Regulations	US AIHA Workplace Environmental Exposure Levels (WEELs)
International Maritime Dangerous Goods Requirements (IMDG Code)	US Chemical Footprint Project - Chemicals of High Concern List
United Nations Recommendations on the Transport of Dangerous Goods Model Regulations	US Clean Air Act - Hazardous Air Pollutants
US - Alaska Limits for Air Contaminants	US CWA (Clean Water Act) - List of Hazardous Substances
US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs)	US CWA (Clean Water Act) - Priority Pollutants
US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)	US CWA (Clean Water Act) - Toxic Pollutants
US - California Office of Environmental Health Hazard Assessment Proposition 65 No Significant Risk Levels (NSRLs) for Carcinogens and Maximum Allowable Dose Levels (MADLs) for Chemicals Causing Reproductive Toxicity	US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides
US - California Permissible Exposure Limits for Chemical Contaminants	US Department of Transportation (DOT), Hazardous Material Table
US - California Proposition 65 - Carcinogens	US DOE Temporary Emergency Exposure Limits (TEELs)
US - California Proposition 65 - No Significant Risk Levels (NSRLs) for Carcinogens	US EPA Carcinogens Listing
US - Hawaii Air Contaminant Limits	US EPCRA Section 313 Chemical List
US - Idaho - Limits for Air Contaminants	US National Toxicology Program (NTP) 14th Report Part A Known to be Human Carcinogens
US - Michigan Exposure Limits for Air Contaminants	US NIOSH Recommended Exposure Limits (RELs) (Spanish)
US - Minnesota Permissible Exposure Limits (PELs)	US OSHA Carcinogens Listing
US - Oregon Permissible Exposure Limits (Z-1)	US OSHA Permissible Exposure Levels (PELs) - Table Z1
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	US OSHA Permissible Exposure Limits - Annotated Table Z-1 (Spanish)
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	US Postal Service (USPS) Numerical Listing of Proper Shipping Names by Identification (ID) Number
US - Washington Permissible exposure limits of air contaminants	US SARA Section 302 Extremely Hazardous Substances
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US ACGIH Threshold Limit Values (Spanish)	

Federal Regulations**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SECTION 311/312 HAZARD CATEGORIES**

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No

Water-Based Polyurethane Top Coat 211NF "A" White

Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	Yes
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

Name	Reportable Quantity in Pounds (lb)	Reportable Quantity in kg
Sodium arsenate	1	0.454

State Regulations

US. CALIFORNIA PROPOSITION 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm

US - CALIFORNIA PROPOSITION 65 - CARCINOGENS: LISTED SUBSTANCE

Titanium dioxide (airborne, unbound particles of respirable size), Arsenic (inorganic arsenic compounds) Listed

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (dipropylene glycol mono-n-butyl ether - alpha isomer; sodium arsenate; triethanolamine; paraffins, petroleum, normal C>10; aluminium hydroxide)
China - IECSC	No (sodium arsenate)
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (paraffins, petroleum, normal C>10)
Korea - KECI	Yes
New Zealand - NZIoC	No (sodium arsenate)
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (paraffins, petroleum, normal C>10)
Vietnam - NCI	No (sodium arsenate)
Russia - ARIPS	No (sodium arsenate; paraffins, petroleum, normal C>10)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	09/23/2019
Initial Date	09/20/2019

CONTACT POINT

PLEASE NOTE THAT TITANIUM DIOXIDE IS NOT PRESENT IN CLEAR OR NEUTRAL BASES

SDS Version Summary

Version	Issue Date	Sections Updated
1.2.1.1.1	09/23/2019	Ingredients, Name

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

Water-Based Polyurethane Top Coat 211NF "A" White

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit,
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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