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Advanced Matrix, Inc.

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AIR QUALITY DIVISION

~~WARREN DO~~

44327 Plymouth Oaks Blvd.

Plymouth, MI. 48170

734.981.2035

September 24, 2024

Eric Grinstern, Environmental Quality Specialist
EGLE Air Quality Division
Grand Rapids District
350 Ottawa Avenue NW, Unit 10
Grand Rapids, Michigan 49503-2341

Re: September 6, 2024 AQD Violation Notice issued to Barron Industries, SRN: N2631, located at 215 Plexus Drive, Oxford, Michigan, Resulting from the August 20, 2024 AQD Inspection.

On behalf of Barron Industries, Advanced Matrix, Inc. is submitting this response letter to comply with the request to provide a written response to the Violation Notice by September 27, 2024. Specifically, it was requested that Barron Industries provide:

1. The dates the violation occurred;
2. An explanation of the causes of the violation;
3. Duration of the violation;
4. Whether the violation is ongoing;
5. A summary of the actions that have been taken and the dates these actions were taken to correct the violation;
6. A summary of the actions that are proposed to be taken to correct the violation and the dates by which these actions will take place; and
7. What steps are being taken to prevent a reoccurrence of the violation.

Please see the responses to the requested information related to this Violation Notice.

1. The dates the alleged violation occurred:
From equipment installation to present. The 900 lb furnace was installed during October 2006. The 2,400 lb furnace was installed during January 2008.
2. Explanation of the causes of the alleged violation:
 - 2.1. Explanation of the causes:
At the time of installation, the furnaces were considered exempt per Michigan Rules:
 - **R 336.1282 Permit to install exemptions; furnaces, ovens, and heaters, (2)(a)(vi).**

- **R 336.1290 Permit to install exemptions; emission units with limited emissions, (2)(a)(i).**
- **R 336.1291 Permit to install exemptions; emission units with “de minimis” emissions, (2).**

2.2. Applicable Exemptions:

R 336.1282 Permit to install exemptions; furnaces, ovens, and heaters.

(2) The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the following:

(a) Any of the following processes or process equipment which are electrically heated or which fire sweet gas fuel or no. 1 or no. 2 fuel oil at a maximum total heat input rate of not more than 10,000,000 Btu per hour:

(vi) Electric resistance melting and holding furnaces that have a capacity of not more than 6,000 pounds per batch and 16,000 pounds per day, which melt only clean charge. Fluxing that results in the emission of any hazardous air pollutant shall not occur in the furnace.

The process equipment, electric resistance melting and holding furnaces, are electrically heated.

The electric resistance melting and holding furnaces have a capacity of not more than 6,000 pounds per batch and 16,000 pounds per day and melt only clean charge. Fluxing agents are minimally used and do not result in the emission of hazardous air pollutants.

The compounds contained in the NUCLEANT 1582 Flux are not listed in EPA's List of Hazardous Air Pollutants.

R 336.1290 Permit to install exemptions; emission units with limited emissions.

(2) The requirement of R 336.1201(1) to obtain a permit to install does not apply to any of the emission units listed in subdivision (a) of this subrule, if the conditions listed in subdivisions (b), (c), (d), and (e) of this subrule are met. Notwithstanding the definition in R 336.1121(a), for the purpose of this rule, uncontrolled emissions are the emissions from an emission unit based on actual operation, not taking into account any emission control equipment. Controlled emissions are the emissions from an emission unit based on actual operation, taking into account the control equipment.

(a) An emission unit which meets any of the following criteria:

(i) Any emission unit that emits only noncarcinogenic volatile organic compounds or noncarcinogenic materials that are listed in R 336.1122(f) as not contributing appreciably to the formation of ozone, if the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively.

The compounds contained in the NUCLEANT 1582 Flux, which is the only Flux used at the facility, are not classified as carcinogenic.

The compounds contained in the NUCLEANT 1582 Flux are not listed in the Michigan Air Toxics System and do not have associated Initial Threshold Screening Level/Initial Risk Screening Level (ITSL/IRSL) values. A call was placed to Doreen Lehner of the AQD to determine if applicable ITSL/IRSL values are available (9/12/2024).

The NUCLEANT 1582 Flux is used in quantities such that the total uncontrolled or controlled emissions of air contaminants are not more than 1,000 or 500 pounds per month, respectively. Currently, the NUCLEANT 1582 Flux is estimated to be used in

quantities that are less than 380 lbs/year or 0.19 tons per year of which 0.0665 tons per year are estimated to be emitted. See Table 2.

Table 1: NUCLEANT 1582 Flux Composition

Name	CAS #	%	GHS US classification
Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)-	16919-27-0	≥10 - ≤25	Acute Toxicity 4 (Oral), H302 Eye Damage 1, H318
Carbonic acid, dipotassium salt	584-08-7	≥10 - ≤25	Skin Irritant 2, H315 Eye Irritant 2, H319 STOT SE 3, H335

Table 2: Total combined potential emissions of all air contaminants from NUCLEANT 1582 Flux estimated to be used at 380 lbs per year.

Name	Average %	Lbs Per Year	Tons Per Year	Tons Per Month
Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)-	17.5	66.5	0.03325	0.00277
Carbonic acid, dipotassium salt	17.5	66.5	0.03325	0.00277
Totals:		133.0	0.06650	0.00554

R 336.1291 Permit to install exemptions; emission units with “de minimis” emissions.

(2) The requirement of R 336.1201(1) to obtain a permit to install does not apply to any emission unit in which potential emissions meet the conditions listed in subdivisions (a) to (d) of this subrule and table 23 for all air contaminants listed. In addition, records shall be maintained in accordance with subdivisions (e) and (f) of this subrule.

(a) The combined potential emissions of all toxic air contaminants with screening levels greater than or equal to 0.04 micrograms per cubic meter and less than 2 micrograms per cubic meter shall not exceed 0.12 tons per year.

(b) The combined potential emissions of all toxic air contaminants with screening levels greater than or equal to 0.005 micrograms per cubic meter and less than 0.04 micrograms per cubic meter shall not exceed 0.06 tons per year.

(c) The combined potential emissions of all toxic contaminants with screening levels less than 0.005 micrograms per cubic meter shall not exceed 0.006 tons per year.

(d) The emission unit has no potential emissions of asbestos and/or subtilisin proteolytic enzymes.

(e) A description of the emission unit shall be maintained throughout the life of the unit.

(f) Documentation and/or calculations identifying the quality, nature, and quantity of the air contaminant emissions are maintained in sufficient detail to demonstrate that the potential emissions are less than those listed in subdivisions (a) to (d) of this subrule and Table 23. Such documentation shall include the toxic air contaminant screening level applicable at the time of installation and/or modification of the emission unit.

The total air contaminants contained in the NUCLEANT 1582 Flux are not listed in table 23, are non-carcinogenic, do not have a screening level per the Michigan Air Toxics System, and potential emissions do not exceed 6 tons per year. A call was placed to Doreen Lehner of the AQD to determine if applicable ITSL/IRSL values are available (9/12/2024).

The NUCLEANT 1582 Flux is used in quantities of not more than 380 lbs/year or 0.19 tons per year, of which, 0.0665 tons per year are estimated to be emitted. See Table 2.

3. Duration of the alleged violation:

From equipment installation to present. The 900 lb furnace was installed during October 2006. The 2,400 lb furnace was installed during January 2008.

4. Whether the alleged violation is ongoing:

The alleged violation is ongoing.

5. A summary of the actions that have been taken and the dates these actions were taken to correct the alleged violation:

September 11, 2024: Begin response to the Violation Notice. No other actions have taken place.

6. A summary of the actions that are proposed to be taken to correct the alleged violation and the dates by which these actions will take place:

Technologies for Particulate Matter (PM) Control may be investigated, such as:

- **Baghouses: Fabric filters that capture particulate matter from the exhaust gas.**
- **Electrostatic Precipitators (ESPs): Use electrical charges to remove particles from the air stream.**

AMI feels that R 336.1282 Permit to install exemptions; furnaces, ovens, and heaters applies to the abovementioned furnaces and installation of abatement equipment will not be necessary.

7. What steps are being taken to prevent a reoccurrence of the alleged violation:

No additional equipment will be installed without first thoroughly reviewing whether a PTI is required prior to installation per Rule 201 of the administrative rules promulgated under Act 451.

Based on the above discussion, we believe that the electric resistance melting furnaces and associated processes at Barron Industries are exempt from regulatory requirements as per the cited exemptions.

Please advise if any additional information is needed and how we can be of further assistance.

Respectfully,

Chris JAMES

Senior Consultant

T: 734.981.2035 \ F: 734.527.6179 \ C: 586.489.9762

E: cjames@advanced-matrix.com

Advanced Matrix, Inc.

44327 Plymouth Oaks Boulevard \ Plymouth, Michigan 48170-2585 \ www.advanced-matrix.com

SDS for the NUCLEANT 1582 Flux:



NUCLEANT 1582

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 25-02-22 Version: 4.0

SECTION 1: Identification

1.1. Identification

Product name : NUCLEANT 1582
Product code : R5108D

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Foundry Industry.
Industrial use

1.3. Supplier

Manufacturer

Vesuvius GmbH GmbH
Gelsenkirchener Str. 10
Borken, 46325
Germany
T +49 2861 83-0 - F +49 2861 83-338
sds@vesuvius.com - www.vesuvius.com

Supplier

Vesuvius USA Corporation (Cleveland Foundry)
Cleveland, OH 44142
T +1 440 826 4548 - F +1 440 243 7658
sds@vesuvius.com - www.vesuvius.com

1.4. Emergency telephone number

Emergency number : +49 2861 83-0

Country	Organization/Company	Address	Emergency number	Comment
USA	CHEMTREC		(800) 424-9300	

SECTION 2: Hazard(s) Identification

2.1. Classification of the substance or mixture

GHS US classification

Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage

Precautionary statements (GHS US)

: P264 - Wash face, hands, hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a doctor.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

NUCLEANT 1582

Safety Data Sheet

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

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)-	CAS-No.: 16919-27-0	≥ 10 – < 25	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Carbonic acid, dipotassium salt	CAS-No.: 584-08-7	≥ 10 – < 25	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: None known.

5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. Avoid contact with skin and eyes.
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6.1.2. For emergency responders

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

Avoid release to the environment.

NUCLEANT 1582

Safety Data Sheet

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

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Mechanically recover the product.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a dry place. Store in a well-ventilated place.
Incompatible materials : Acids. Water, humidity.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

NUCLEANT 1582

No additional information available

Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)

No additional information available

Carbonic acid, dipotassium salt (584-08-7)

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves. Neoprene or nitrile rubber gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Dust production: dust mask with filter type P2

Personal protective equipment symbol(s):



NUCLEANT 1582

Safety Data Sheet

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

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Color	: Beige
Odor	: odorless
Odor threshold	: No data available
pH	: No data available
Melting point	: 650 °C
Freezing point	: Not applicable
Boiling point	: No data available
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Density	: 1,4 g/cm ³
Solubility	: In water, material is partially soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable
Explosive properties	: None.
Oxidizing properties	: None.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Acids. Water, humidity.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified

NUCLEANT 1582

Safety Data Sheet

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

Acute toxicity (inhalation) : Not classified

NUCLEANT 1582	
ATE US (oral)	1278,316 mg/kg body weight
Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)	
LD50 oral rat	324 mg/kg
ATE US (oral)	324 mg/kg body weight
Carbonic acid, dipotassium salt (584-08-7)	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	> 4,96 mg/l (Exposure time: 4.5 h)

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
STOT-single exposure : Not classified

Carbonic acid, dipotassium salt (584-08-7)	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : Not classified

Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)	
LOAEL (oral,rat,90 days)	≈ 4 mg/kg body weight Animal: rat, Guideline: other:
NOAEL (oral,rat,90 days)	≈ 25 mg/kg body weight Animal: rat, Guideline: other:

Aspiration hazard : Not classified
Viscosity, kinematic : Not applicable
Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Serious damage to eyes.

SECTION 12: Ecological Information

12.1. Toxicity

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

Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)	
LC50 - Fish [1]	172,4 mg/l (Exposure time: 96 h - Species: Danio rerio (semi-static))
EC50 - Crustacea [1]	48,2 mg/l Test organisms (species): Daphnia magna
NOEC (chronic)	14,1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	4 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '21 d'
Carbonic acid, dipotassium salt (584-08-7)	
EC50 - Crustacea [1]	630 mg/l (Exposure time: 48 h - Species: Ceriodaphnia dubia)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

NUCLEANT 1582

Safety Data Sheet

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

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional legislation (waste)	: Hazardous waste.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions. Dispose of solid residues at an authorized site. Refer to all applicable national, international and local regulations or provisions.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

Not regulated for transport

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Not applicable
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT)	: Not applicable
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TDG

Transport hazard class(es) (TDG)	: Not applicable
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IMDG

Transport hazard class(es) (IMDG)	: Not applicable
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IATA

Transport hazard class(es) (IATA)	: Not applicable
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14.4. Packing group

Packing group (DOT)	: Not applicable
Packing group (TDG)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable

14.5. Environmental hazards

Other information	: No supplementary information available.
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14.6. Special precautions for user

DOT

No data available

TDG

No data available

NUCLEANT 1582

Safety Data Sheet

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

IMDG

No data available

IATA

No data available

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)-	16919-27-0	Present	Active	
Carbonic acid, dipotassium salt	584-08-7	Present	Active	

15.2. International regulations

CANADA

Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)
Listed on the Canadian DSL (Domestic Substances List)

Carbonic acid, dipotassium salt (584-08-7)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Carbonic acid, dipotassium salt (584-08-7)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Titanate(2-), hexafluoro-, dipotassium, (OC-6-11)- (16919-27-0)
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemicals Inventory)

NUCLEANT 1582

Safety Data Sheet

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

Carbonic acid, dipotassium salt (584-08-7)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on the Japanese ENCS (Existing New Chemical Substances) inventory
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)
Listed on the NCI (Vietnam - National Chemicals Inventory)

15.3. US State regulations

No additional information available

SECTION 16: Other information

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

Full text of H-phrases

H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Safety Data Sheet (SDS), USA

Comment:

Information contained within this safety data sheet is based on the current state of knowledge and relates to such products, their intended usage and the required safety precautions. Although every effort has been made to ensure that this information is correct and gives adequate safety margins in line with current knowledge, it does not constitute a specification and no information for other purposes, particularly information regarding properties of the delivered materials, may be inferred. Determination of the technical suitability of each material and complying with any guidance relating to safe usage remain the sole responsibility of the user. Consequently, beyond any separately agreed contractual arrangements, the aforementioned manufacturer and its subsidiaries exclude any and all liability resulting from the use of the product. Unknown hazards may be inherent in all materials; therefore these materials shall be treated with caution. Although certain hazards are described herein, we are unable to guarantee that these are the only hazards.