

Safety Data Sheet White Smoke Pellet

SECTION 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND COMPANY OR UNDERTAKING

Product Identifier

- 1.1. Product name: White Smoke Pellet – PHOB006; PH001; PH118
Contains Guanidine nitrate and Potassium chlorate
- UFI: U300-D0D8-N004-23S6
- 1.2. Relevant identified uses of the substance or mixture and uses advised against A smoke generation pellet for the marking of airflows

1.3. Details of the supplier of the safety data sheet

Company	Arctic Hayes Ltd 9 Millshaw Park Avenue Leeds LS11 0LR
Phone	+44 113 271 5245
Website	www.arctic-hayes.com
Email	sales@arctic-hayes.com

- 1.4. Emergency telephone number **NHS 111**

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

- Classification (Regulation (EC) No 1272/2008) [CLP/GHS]: Acute Tox. 4. H302; Eye Dam. H318;
- Additional Information: For full text of Hazard and EU Hazard-statements: see section 16

2.2 Label elements

UFI: U300-D0D8-N004-23S6



Signal word: Warning

Hazard statements

H302 Harmful if swallowed
H318 Causes serious eye damage.

Precautionary statements

P264 Wash hands thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.

P280 Wear protective gloves / eye protection.

P305 + P351 + P338+P310

If in Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Immediately call a POISON

CENTER or doctor

P501 Dispose of contents/container in accordance with local / regional / international regulations.

Supplemental Hazard Information (EU)

- None

2.3 Other hazards

- Ignites readily. Product burns without a flame to give a dense white harmful smoke.

- Combustion products include ammonium chloride

- This product contains <1% respirable silica

- Not a PBT according to Reach Annex XIII

- Not a vPvB according to Reach Annex XIII

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances: N.A.

3.2. Mixture

Contains the following hazardous ingredients or ingredients with a workplace exposure limit

Chemical Name	Conc.	CAS No.	EC No.	Classification according to Regulation (EC) No 1272/2008 (CLP)	SCL1M-Factor/ATE	REACH Registration Number	WEL/OEL
Kaolin	50-60%	1332-58-7	310-194-1	Not classified	-	-	Yes
Guanidinium nitrate	10-20%	506-93-4	208-060-1	Acute Tox. 4, H302; Eye Dam. 1, H318; Acute Tox. 4; H332	-	01-2119452053-50-xxxx	No
Potassium chlorate	10-20% w/w	3811-04-9	223-289-7	Ox. Liq. H271; Acute Tox. H301	-	01-2119494917-18-xxxx	No
Quartz (crystalline silica) May be present as a natural component of Kaolin at <1%	<1%	14808-60-7	238-878-4	STOT. RE.1.H372	-	-	Yes

SECTION 4: FIRST AID MEASURES

Rescuers should take suitable precautions to avoid becoming casualties themselves

4.1 Description of First Aid Measures General Advice:

Show this safety data sheet to the doctor in attendance

Contact with eyes:

If substance has got into eyes, immediately wash out with plenty of water for several minutes. Irrigate eyes thoroughly whilst lifting eyelids.

Remove contact lenses, if present and easy to do. Continue rinsing.

Get immediate medical advice/attention

Contact with skin:

Take off contaminated clothing and wash it before reuse.

Wash affected area with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention

Inhalation:

If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

If unconscious, place person in recovery position
Apply artificial respiration only if patient is not breathing but **do not** use mouth to mouth resuscitation. Get immediate medical advice/attention.

Ingestion:

Rinse mouth with water (do not swallow).
Give 200-300mls (half pint) water to drink.
Do NOT induce vomiting. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Contact with eyes

- May cause severe damage with formation of corneal ulcers and permanent impairment of vision. Causes redness and swelling.

Contact with skin

- May cause redness and irritation.
- In cases of severe exposure, blistering of the skin may develop.

Ingestion

- Can form methaemoglobin in the blood, causing cyanosis.
- May cause burns to mouth and throat.
- May cause stomach pain.
- May cause nausea/vomiting.
- There may be bleeding from the mouth or nose.

Inhalation

- May cause shortness of breath.
- May cause coughing and tightness of chest.
- Prolonged and/or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of silicosis are cough and breathlessness

4.3. Immediate Medical Attention

Risk of methemoglobinemia. Not to be treated with methylthionine. - Treat symptomatically.

SECTION 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media:

Suitable extinguishing media: Sand/earth; foam; water spray; carbon dioxide. - Unsuitable extinguishing media: Do not use water jets; Dry agent extinguishers are unsuitable and should not be used.

5.2. Special Hazards arising from the mixture:

- Ignites readily.
- Contains an oxidising agent; may assist combustion.
- May form explosive dust/air mixtures.
- Gives off irritating or toxic fumes (or gases) in a fire.
- Decomposition products may include oxygen, ammonium chloride, carbon oxides, nitrogen oxides, ammonia, hydrocyanic acid (HCN).

5.3. Advice for fire-fighters:

- Collect contaminated fire extinguishing water separately. This MUST not be discharged into drains. Prevent fire extinguishing water from contaminating surface or ground water.
- Special protective equipment: Wear self-contained breathing apparatus (SCBA). Wear full protective clothing including chemical protection suit.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures:

- No action shall be taken involving any personal risk or without suitable training.
- Only trained and authorised personnel should carry out emergency response.
- Avoid formation of dust.
- Shut off all ignition sources

- Personal precautions for non-emergency personnel: Avoid breathing dust/fume/gas/mist/vapours/spray; Avoid contact with skin and eyes; Wear protective clothing as per section 8; Wash thoroughly after handling; Eyewash bottles should be available.
- Personal precautions for emergency responders: Evacuate the area and keep personnel upwind; Wear chemical protection suit; Wear self-contained breathing apparatus (SCBA).

6.2. Environmental precautions:

- Avoid release to the environment.
- Do not allow to enter public sewers and watercourses.
- If contamination of drainage systems or water courses is unavoidable, immediately inform appropriate authorities.

6.3. Methods and material for containment and cleaning up:

- Do not absorb spillage in sawdust or other combustible material.
- Avoid formation of dust.
- Shut off all ignition sources.
- Take action to prevent static discharges.
- Do not allow to enter public sewers and watercourses.
- Small spills Wipe up spillage with damp absorbent cloth or towel. Wash spill site with water and detergent.
- Large spills Evacuate the area and keep personnel upwind. Damp down to avoid dust generation. Absorb spillage in earth or sand. Sweep or shovel-up spillage and remove to a safe place. Place in appropriate container. Seal containers and label them. Remove contaminated material to safe location for subsequent disposal. Ventilate the area and wash spill site after material pick-up is complete.

6.4. Reference to other sections:

- See section(s): 7, 8 & 13

SECTION 7: HANDLING AND STORAGE**7.1. Precautions for safe handling**

- Read the label before use.
- Prevent formation of dust.
- Take precautionary measures against static discharges.
- Do not breathe the smoke.
- Avoid contact with skin and eyes.
- Do not eat, drink or smoke when using this product.
- Keep away from heat and sources of ignition.
- Avoid contact with acids and alkalis.
- Avoid release to the environment.
- Take off contaminated clothing.
- Contaminated work clothing should not be allowed out of the workplace.
- Contaminated clothing should be laundered before reuse.
- Eyewash bottles should be available.

7.2. Conditions for storage, including any incompatibilities

- Shelf life: 5 years when stored in the original unopened sales container at ambient temperatures.
- Store in a cool, dry well-ventilated place. Keep container tightly closed.
- Keep away from combustible material.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Keep out of reach of children.

7.3. Specific end use

A smoke generation pellet for the marking of airflows.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

- For currently recommended monitoring procedures, see HSE series 'Methods for the Determination of Hazardous Substances' (MDHS).
- Occupational exposure to respirable crystalline silica dust should be monitored and controlled.
- Kaolin

WEL (long term) 2 mg/m³ (respirable dust, UK)

- Guanidinium nitrate

DNEL (inhalational) 3.5 mg/m³ Industry, Long Term, Systemic Effects

DNEL (inhalational) 10.5 mg/m³ Industry, Acute/Short Term, Systemic Effects

DNEL (dermal) 1 mg/kg (bw/day) Industry, Long Term, Systemic Effects

DNEL (inhalational) 870 ug/m³ Consumer, Long Term, Systemic Effects

DNEL (dermal) 500 ug/kg (bw/day) Consumer, Long Term, Systemic Effects

DNEL (oral) 500 ug/kg (bw/day) Consumer, Long Term, Systemic Effects

- Quartz (crystalline silica)

(EU) OELV (long term TWA) 0.1 mg/m³

WEL (long term) 0.1 mg/m³ (UK)

- Ammonium chloride (produced as part of combustion chemical reaction)

WEL (long term) 10 mg/m³ (fume or respirable dust, UK)

WEL (short term) 20 mg/m³ (fume or respirable dust, UK)

DNEL (inhalational) 33.5 mg/m³ Industry, Long Term, Systemic Effects

DNEL (dermal) 128.9 mg/kg (bw/day) Industry, Long Term, Systemic Effects

DNEL (inhalational) 9.4 mg/m³ Consumer, Long Term, Systemic Effects

DNEL (dermal) 55.2 mg/kg (bw/day) Consumer, Long Term, Systemic Effects

DNEL (oral) 11.4 mg/kg (bw/day) Consumer, Long Term, Systemic Effects

DNEL (oral) 55.2 mg/kg (bw/day) Consumer, Acute/Short Term, Systemic Effects

PNEC aqua (freshwater) 250 - 1 200 ug/l

PNEC aqua (intermittent releases, freshwater) 430 - 1 200 ug/l

PNEC aqua (marine water) 25 - 11 200 ug/l

PNEC (STP) 16.2 mg/l

PNEC terrestrial (soil) 163 - 50 700 ug/kg

8.2. Exposure controls

- Selection and use of personal protective equipment should be based on a risk assessment of exposure potential.

- Respiratory protection

If exposure to smoke is likely then wear suitable respiratory equipment.

Where a reusable half mask respirator is required, use EN 140, with gas/vapour filter EN 14387 type ABEK, or EN 405; EN 1827 and EN 143 particle filter.

Where a full face mask respirator is required, use EN 136, with gas/vapour filter EN 14387 type ABEK and particle filter EN 143.

- Skin protection

Wear suitable protective clothing.

Wear protective gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374. The selection of a suitable glove depends on work conditions and whether the product is present on its own or in combination with other substances. Breakthrough time is dependent on the characteristics of the brand of glove used and the supplier should be consulted. PVC or rubber gloves are recommended.

- Eye/face protection

Wear goggles giving complete eye protection approved to standard EN 166.

- Hygiene measures

Contaminated clothing should be laundered before reuse.

Do not eat, drink or smoke when using this product.

Eyewash bottles should be available.

- Environmental exposure controls

Avoid release to the environment.

Do not empty into drains
Compressed product unlikely to be released unless damaged.



SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State:	Compressed pellet
Colour:	Off-white.
Odour:	Odourless.
Melting Point:	Not applicable.
Boiling point:	Not applicable.
Flammability:	Compressed pellet not flammable, smoke may be flammable
Flash-Point:	Does not flash.
Autoignition temperature	Not available
Decomposition temperature:	Not available
pH-value (quant.):	Not available.
Solubility:	Partly soluble in/with water.
Partition coeff. (n-octanol/water):	Not available.
Vapour pressure:	Not available.
Density:	Not available.
Particle characteristics:	Not available
Minimum Ignition temp.	Not available.
Minimum Ignition:	Not available
Oxidizing properties:	Contains an oxidising agent; may assist combustion.
Energy Explosive properties	Not applicable

9.2 Other Information:

Oxidizing properties: Contains an oxidising agent; may assist combustion.
- No further information available

SECTION 10. STABILITY AND REACTIVITY

10.1 Reactivity

- No hazardous reactions known if used for its intended purpose

10.2 Chemical stability

- Considered stable under normal conditions.

10.3 Possibility of hazardous reactions

- Reacts with combustible material.
- Reacts with acids liberating toxic gas (chlorine).

10.4 Conditions to avoid

- Avoid formation of dust.
- Keep away from heat and sources of ignition.
- Keep away from static electricity.

10.5 Incompatible materials

- Incompatible with strong acids.
- Incompatible with alkalis (strong bases).
- Incompatible with halogenated substances.

10.6 Hazardous decomposition products

- Decomposition products may be toxic

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

- Acute Toxicity

Harmful if swallowed

Classification based on calculation and concentration thresholds.

- Skin corrosion/irritation

Based on available data, the classification criteria are not met.

- Serious eye damage/irritation

Causes serious eye damage.

Classification based on calculation and concentration thresholds.

- Respiratory or skin sensitisation

Based on available data, the classification criteria are not met.

- Germ cell mutagenicity Based on available data, the classification criteria are not met.

Quartz (SiO₂) is listed in Annex III of REACH as # Suspected mutagen: The outcome in CTA assay is positive according to ISSCTA.

- Carcinogenicity Based on available data, the classification criteria are not met.

Quartz (SiO₂) is listed in Annex III of REACH as # Suspected carcinogen: IARC monographs classified the substance as carcinogenic or probably/possibly carcinogenic.

Crystalline silica in the form of quartz or cristobalite dust is carcinogenic to humans (Group 1). (IARC Monograph 100, 2012).

Exposure in high concentrations or over prolonged periods of time can lead to lung disease (silicosis) and an increased risk of lung cancer.

- Reproductive toxicity

No evidence of reproductive effects

- Specific target organ toxicity (STOT) - single exposure

Based on available data, the classification criteria are not met.

- Specific target organ toxicity (STOT) - repeated exposure

Based on available data, the classification criteria are not met.

- Aspiration hazard

Based on available data, the classification criteria are not met.

- Contact with eyes

May cause severe damage with formation of corneal ulcers and permanent impairment of vision.

Causes redness and swelling.

- Contact with skin

May cause redness and irritation.

- Ingestion Can form methaemoglobin in the blood, causing cyanosis

May cause burns to mouth and throat.

May cause stomach pain.

May cause nausea/vomiting.

There may be bleeding from the mouth or nose.

- Inhalation Causes shortness of breath.

May cause coughing and tightness of chest.

Prolonged and/or massive inhalation of respirable crystalline silica dust may cause lung fibrosis, commonly referred to as silicosis. Principal symptoms of silicosis are cough and breathlessness.

11.2 Information on other hazards

- No further information

SECTION 12. ECOLOGICAL INFORMATION

12.1 Toxicity

- Based on available data, the classification criteria are not met.

- Kaolin

LC50 (fish) > 1 000 mg/l (4 days)

EC50 (daphnia) > 1 000 mg/l (48 hr)

IC50 (algae) > 1 000 mg/l (72 hr)

- Guanidinium nitrate

LC50 (fish) 690 - 1 850 mg/l (4 days)

EC50 (aquatic invertebrates) 70.2 mg/l (48 hr)

EC50 (aquatic algae) 11.8 - 33.5 mg/l (72 hr)

- Ammonium chloride (produced as part of combustion chemical reaction)

LC50 (fish) 42.91 - 209 mg/l (4 days)

EC50 (aquatic invertebrates) 101 - 136.6 mg/l (48 hr)

EC50 (aquatic algae) 2.7 g/l (18 days)

12.2 Persistence and degradability

- Kaolin This substance is not readily biodegradable
- Guanidinium nitrate Biodegradable
- Potassium chlorate Biodegradable

12.3 Bio accumulative potential

- Chlorate is converted to chlorite in plants, which accumulates in cells until toxic concentrations are reached, when the plant dies

12.4 Mobility in soil

- No information available

12.5 Results of PBT and vPvB assessment

- Not a PBT according to REACH Annex XIII
- Not a vPvB according to REACH Annex XIII

12.6 Endocrine disrupting properties

- No information available

12.7 Other adverse effects

- No information available

SECTION 13. DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

- Do not discharge into drains or the environment, dispose to an authorised waste collection point
- Dispose of product and packaging in accordance with national waste regulations.
- This material and/or its container must be disposed of as hazardous waste.

13.2 Classification

- The waste must be identified according to the List of Wastes (2000/532/EC).
- Hazardous Property Code(s): HP 4 Irritant; HP 6 Acute Toxicity.

SECTION 14. TRANSPORT INFORMATION

Not classified as hazardous for transport

14.1 UN number

- UN No.: Not applicable

14.2 UN proper shipping name

- Proper Shipping Name: Not applicable

14.3 Transport hazard class(es)

- Hazard Class: Not applicable

14.4 Packing group

- Packing Group: Not applicable

14.5 Environmental hazards

- Not Classified

14.6 Special precautions for user

- Not Classified

14.7 Maritime transport in bulk according to IMO instruments

- Not applicable

14.8 Road/Rail (ADR/RID)

- Proper Shipping Name: Not applicable

- ADR UN No.: Not applicable

- ADR Hazard Class: Not applicable

- ADR Packing Group: Not applicable

- Tunnel Code: Not applicable

14.9 Sea (IMDG)

- Proper Shipping Name: Not applicable

- IMDG UN No.: Not applicable - IMDG Hazard Class: Not applicable

- IMDG Pack Group.: Not applicable

14.10 Air (ICAO/IATA)

- Proper Shipping Name: Not applicable

- ICAO UN No.: Not applicable - ICAO Hazard Class: Not applicable –

ICAO Packing Group: Not applicable

SECTION 15. REGULATORY INFORMATION

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

- This safety data sheet is provided in compliance with REACH Regulation (EC) No 1907/2006 as amended by Regulation (EU) 2020/878.

- Regulation (EC) No. 1272/2008 on the classification, labelling and packaging of substances and mixtures (CLP Regulation) applies in Europe.

- The COSHH Regulations apply in the UK

- Quartz (crystalline silica) is listed in Annex III of REACH as # Suspected carcinogen: IARC monographs classified the substance as carcinogenic or probably/possibly carcinogenic # Suspected mutagen: The outcome in CTA assay is positive according to ISSCTA.

15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

SECTION 16. OTHER INFORMATION

Information contained in this data sheet is accurate to the best of our knowledge and belief and is given in good faith. It is intended to describe our product from the point of view of safety requirements and is not intended to guarantee any particular properties.

Sources of data: Information from published literature and supplier safety data sheets

Revision No. 5. Revised June 2024.

Changes made: Updated due to Potassium chlorate classification change.

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Eye Dam. 1, H318: Classification based on calculation and concentration thresholds

Acute Tox. 4, H302: Classification based on calculation and concentration thresholds

Text not given with phrase codes where they are used elsewhere in this safety data sheet:

- H271: May cause fire or explosion; strong oxidiser
- H301: Toxic if swallowed
- H318: Causes serious eye damage
- H332: Harmful if inhaled
- H372: Causes damage to organs through prolonged or repeated exposure

Acronyms

- CAS: Chemical Abstracts Service
- DNEL: Derived No-Effect Level
- EC: European Community
- EC50: Effective Concentration, 50%
- GHS: Globally Harmonised System
- IARC: International Agency for Research on Cancer
- IC50: Half-maximal inhibitory concentration
- LC50: Lethal Concentration, 50%
- LD50: Lethal Dose, 50%
- NOAEC: No observed adverse effect concentration
- NOAEL: No observed adverse effect level
- NOEC: No observed effect concentration
- OEL: Occupational Exposure Limit
- PBT: Persistent, Bioaccumulative and Toxic
- PNEC: Predicted No-Effect Concentration
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- vPvB: very Persistent and very Bioaccumulative
- WEL: Workplace Exposure Limit

Previous revisions should be destroyed.