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MATERIAL SAFETY DATA SHEET

PUFFIN SILCOAT SUPER

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TRADE NAME : PUFFIN SILCOAT SUPER

1. IDENTIFICATION OF SUBSTANCE AND COMPANY

Identification of Substance or Preparation
Chemical description : Pottasium silicate and solgel mixture
Recommendation : Mineral paint

Company / Undertaking Identificaation Supplier
PT.Indowijaya Sakti Teguh
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2. HAZARD IDENTIFICATION

Classification of the substance or mixture : Not classified

GHS Label elements

Signal word : Void

Hazard statements: void .

Precautionary statements

General : Keep out of reach of children.
Prevention: Not applicable.
Response: Not applicable**.**
Storage: Not applicable.
Disposal: Not applicable.
Other hazards which do not result in classification: None known

3. COMPOSITION/INFORMATION ON INGREDIENTS:

Substance/mixture : mixture

Ingredients name	%	Cas number	
Titanium dioxide	25-30	13463-67-7	Carc. 2, H351
Potassium silicate	10-15	1312-76-1	Skin Irrit. 2, H315; Eye Irrit. 2, H319 Specific concentration limits: Skin Irrit. 2; H315: C ≥ 40 % Eye Irrit. 2; H319: C ≥ 40 %
Solgel	10-15	7631-86-9	
Zinc sulphyde	40-50	1314-98-3	

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.
Chemical formula: Not applicable

4. FIRST AID MEASURES

Description of first aid measures

1. **Eye contact :** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs
2. **Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
3. **Skin contact :** Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
4. **Ingestion :** Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur

Most important symptoms and effects, both acute and delayed
Potential acute health effects

Eye contact : No known significant effects or critical hazards
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards
Over-exposure signs/symptoms
Eye contact : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : in case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments : No specific treatment.
Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training..

5. FIRE FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media: None known

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products: Decomposition products may include the following materials:

carbondioxide, carbon monoxide, nitrogen oxides, metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

For non-emergency personel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with noncombustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

8. EXPOSURE CONTROLS PERSONAL PROTECTION

Control parameters

Occupational exposure limits

None

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period.

Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying to EN 166 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side shields.

Skin protection

Hand protection : There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/ chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Wear suitable gloves tested to EN374. Recommended, gloves (breakthrough time) > 8 hours: nitrile rubber, neoprene, PVC

May be used, gloves (breakthrough time) 4 - 8 hours: polyvinyl alcohol (PVA), 4H

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a

respiratory protection program to ensure proper fitting, training, and other important aspects of use

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearaance

Physical state	**:** pasty.
Colour	**:** white
Odour	**:** Characteristic
Odour threshold	**:** Not Available
PH	**:**10-11
Melting/freezing point	**:**0
Boiling point	**:** Not applicable
Flash point	**:** Not available.
Burning time	**:** Not applicable
Burning rate	**:** Not applicable.
Evaporation rate	**:** Not applicable
Flammability (solid, gas)	**:** Not applicable

Lower and upper explosive (flammable) limits : Not applicable

Vapour pressure	**:** Not applicable
Vapour density	**:** Not applicable
Relative density	**:**1.5 to 1.8 g/cm^3
Solubility	**:** Easily soluble in the following materials: cold water and hot water.
Solubility in water	**:** Easily soluble
Viscosity	: Dynamic at 20 °C: 3100-4100* mPas
Kinematic	: Not determined

Partition coefficient: noctanol/water : Not available.

Auto-ignition temperature.	**:** Not applicable.
Decomposition temperature	**:** Not available.
SADT	**:** Not available

10. STABILITY AND REACTIVITY

Reactivity: No specific test data related to reactivity available for this product or its ingredients.

Chemical Stability : The product is stable

Possibility of Hazardous reaction : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : Keep away from the following materials to prevent strong exothermic reactions: oxidising agents, strong alkalis, strong acids

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

SADT : Not available.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Product/Ingredient name	Result	Species	Dose	Exposure
Potassium silicate	LD50 Oral	Rat	>5,000 mg/kg	(OECD 401)
	LD 5O DERMAL	Rat	>5,000 mg/kg	OECD 402)
	LC 50 INHALAT	Rat	5 mg/l	4hour

Irritation/ corrosion

Product/ ingredient name	Result	species	score	exposure	observation
Potassium silicate	Eyes - irritant	Mammal - species unspecified	-	-	-

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
Potassium silicate	skin	Mammal - species unspecified	Sensitising

Mutagenicity
Not available.

Carcinogenicity
Not available.

Reproductive toxicity
Not available.

Teratogenicity
Not available.

Specific target organ toxicity (single exposure)
Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Potassium silicate	Category 1	Not determined	trachea

Aspiration hazard

Not available.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

long-term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards**.**

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

12. ECOLOGICAL INFORMATION

Toxicity

1312-76-1 Silicic acid, potassium salt NOEC >1 mg/l (fish) >1 mg/l (invertebrates) EC 50/48h >100 mg/l (daphnia) (OECD 202) EC 50/72 h >100 mg/l (algae) LC 50/96 h >100 mg/l (fish) (DIN EN ISO 7346-2) EC 0 >1,000 mg/l (activated sludge) (30min) · 12.2 Persistence and degradability No further relevant inf

Product/ingredient name	Result	Species	Exposure
3-iodo-2-propynyl butylcarbamate (IPBC)	Acute EC50 >100 mg/l Acute EC50 100 mg/l Acute LC50 01000 mg/l	Algae-Scenedesmussubspicatus Crustaceans - Daphnia magna Fish - Oncorhynchusmykiss Fish - Hatchling, Weanling)	72 hours 96 hours 96 hours

Persistence/degradability

Not available.
Bioaccumulative potential:
Not available.
Mobility in soil
Soil/water partition: Not available.
coefficient (KOC)

Other adverse effects : No known significant effects or critical hazards.

13. DISPOSAL CONSIDERATION

Disposal Methods : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and nonrecyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

14. TRANSPORT INFORMATION

	UN	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

This preparation is not classified as dangerous according to international transport regulations (ADR/RID, IMDG or ICAO/IATA).

Additional information
ADR / RID :.
Special precautions for user : transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Transport in bulk according to Annex II of Marpol and the IBC Code : Not available.

15. REGULATORY INFORMATION

Singapore - hazardous chemicals under government control
None.

16. OTHER INFORMATION

Key to abbreviations :

- **ATE =** Acute Toxicity Estimate
- **BCF =** Bioconcentration Factor
- **GHS =** Globally Harmonized System of Classification and Labelling of Chemicals
- **IATA =** International Air Transport Association
- **IBC =** Intermediate Bulk Container
- **IMDG =** International Maritime Dangerous Goods
- **LogPow**= logarithm of the octanol/water partition coefficient
- **MARPOL** = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- **UN** = United Nations.

References : Not available.

NOTES

PT.INDOWIJAYA SAKTI TEGUH has a responsibility to take reasonable care for our own health and safety and the health and safety of others who may be affected by our acts or omissions. This M.S.D.S. at the date of issue has Health and Safety Information of the product, and how to safely handle and use this product in the workplace.

All information given is our best knowledge, and because we cannot anticipate or control the conditions of the end use of this product, prior to usage, each user must determine by reviewing this M.S.D.S, Safe Handling and usage of this products in the Workplace.

PT.INDOWIJAYA SAKTI TEGUH believe this information to be reliable, and in good faith, but no guarantees or warranties of any kind are made as to its accuracy, suitability to particulate applications due to variations in methods, conditions and equipment. When PT. INDOWIJAYA SAKTI TEGUH provides information and service involving skill, assistance, judgment, recommendations, and or advise this is done on the best of our knowledge only; information is not be relied upon.

Full scale testing and performance of the product is the responsibility of the end user. For further information or classification of certain points to ensure that the user has made a proper assessment and reasonable precautions have been applied, please contact PT. INDOWIJAYA SAKTI TEGUH.