



CERAMOND N ii Safe Data Sheet

1. Product Identification & Composition/Information on Ingredients

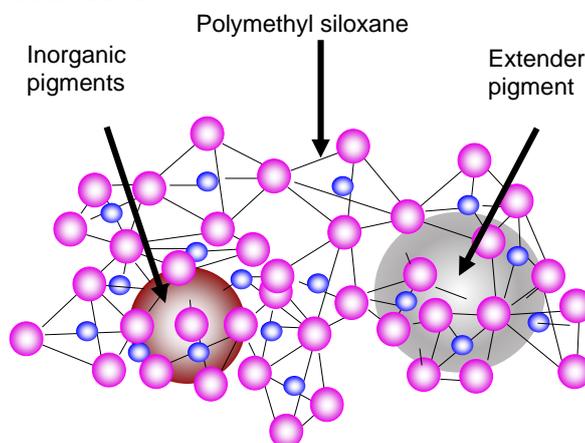
① Distinction between the simple and mixture : mixture

② Ingredients

Trade name	Chemical name	CAS No.	content(wt%)	
			BP/BBP/Base S/AS/Spatter	X10/T/T30/Top
Chemical name & Product name	Product of reaction polymethylsiloxane, alcohol, water, Ceramic coating, non-stick coating, CM N ii, CM N ii BP, CM N ii IBP, CM N ii EBP, CM N ii BBP, CM N ii IBBP, CM N ii EBBP, CM N ii S, CM N ii IS, CM N ii ES, CM N ii AS, CM N ii IAS, CM N ii EAS, CM N ii T, CM N ii IT, CM N ii ET, CM N ii T30, CM N ii IT30, CM N ii ET30, CM N ii TBP, CM N ii ITBP, CM N ii ETBP, CM N ii TBP30, CM N ii ITBP30, CM N ii ETBP30			
Polymethylsiloxane	$(OR)_3Si(OSiOR)_nOR \cdot (R')_3Si(O R-SiOH)_nOSi(R')_3$	9016-00-6	16~18	12~18
Silica Sol	SiO ₂	67762-90-7	13~17	11~16
Silicone Oxide	SiO ₂	14808-60-7	4~8	
Pigment White	TiO ₂	13463-67-7	9~18	
Pigment Black	Cr ₂ CuO ₄	68186-91-4		
Pigment Red	Fe ₂ O ₃	1309-37-1		
Pigment Yellow	Oxide of Ti-Cr-Sb	68186-90-3		
Pigment Green	Al ₂ Co ₂ Cr ₂ O ₃	68187-11-1		
Pigment Blue	CoAl ₂ O ₄	1345-16-0		
Pigment Silver	K ₂ O·3Al ₂ O ₃ ·6SiO ₂ , TiO ₂	12001-26-2,13463-67-7,1309-37-1		0~5
Pigment Gold	K ₂ O·3Al ₂ O ₃ ·6SiO ₂ , TiO ₂ , FeO ₃	12001-26-2,13463-67-7,1309-37-1		
WATER	H ₂ O	7732-18-5	30~40	17~24
Methanol	CH ₃ OH	67-56-1	17~25	35~57
Ethanol	C ₂ H ₅ OH	64-17-5		
IPA	(CH ₃) ₂ CHOH	67-63-0		
Others	-	-	lower 3	lower 3

※ Information on chemical name of composed monomer and CM N ii are commercially protected. Its toxic effects are not studied thoroughly.

③ Structure – Ceramic coated film structure





2. Hazards Identification

- **CERCLA index (0~3):** Health=3, Flammability=3, Reactivity=0, Continuity=0

- **NFPA index (0~4):** Health=1, Flammability=3, Reactivity=0

① Emergency Overview

Colored Liquid with distinctive alcohol smell. May cause irritation on a respiratory organ, skin and eyes. Flammable liquid and vapor. May cause explosion. Should be isolated from all ignitions. Avoid inhalation of vapor and dust. Avoid eye, skin and clothing contact. Should be used under proper ventilation. To be handled with care.

② Potential effect on health

· Inhalation

- Short term exposure; May cause irritation. May cause same effect as swallowed in short term. May cause tinnitus, indigestion, dizziness, hypoesthesia, twitch, trouble in visual organ and harm nerve additionally

- Long term effect; Same effect as swallowed in short term. May cause headache

· Skin contact

- Short term exposure; May cause irritation. May cause same effect as swallowed in short term. May cause dizziness and harm nerve additionally

- Long term effect; Same effect as swallowed in short term. Same effect as short term exposure

· Eye contact

- Short term exposure; May cause irritation. May harm eyes additionally

- Long term effect; Same effect as short term exposure

· Ingestion

- Short term exposure; May cause trouble in judgment, vomiting, diarrhea, difficult breathing, hypotension, irregular pulse, headache, drowsiness, dizziness, disorientation, auditory trouble, sensitiveness on light

- Long term effect; Same effect as swallowed in short term. Same effect as short term exposure

③ Carcinogenesis

· **Occupation Safety and Health Agency Act:** NA : **OSHA:** NA : **NTP:** NA : **IARC:** NA

3. First Aid Measures

Inhalation; First aid treatment Move the subject to the fresh airing place from the exposed area Perform artificial respiration if breathing is stopped Warm and ease the person who was exposed Give general supplementary treatment Get medical attention immediately

Skin Contact; First aid treatment Take off the polluted clothes and shoes immediately Wash exposed parts with soap or mild detergent and large amount of water until no remaining trace of chemicals is found (at least 15-20 minutes)

Eye contact; First aid treatment Raise upper and lower eyelids immediately flushing with large amount of water or saline solution until no remaining trace of chemicals is found (at least 15-20 minutes) Get medical attention immediately

Ingestion; First aid treatment Use emetics when found ingestion of CERAMOND within 2 hours Clean completely using water added with natrum carbonate Get medical attention immediately Gastro lavage must be performed by doctor or medical assistant.

Information for doctors; Antidote

4. Fire Fighting Measures

Danger of Explosion and Fire- Exposure to heat or spark may cause fire Vapor is heavier than air and can move far to reach the ignition point and cause reverse flaming Vapor, air mixture can cause explosion

Fire extinguishing agents-Powder extinguisher, carbon dioxide, water flush or froth

Use water, fog or froth in case of big fire

Extinguishment-Remove the container from the fire spot when possible Make a hilly spot around the water used for fire control for post action Cool down the side of container with coolant where exposed to fire when extinguished thoroughly

Stay away from tank Extinguish if one can control spreading of fire Use large amount of water in the form of fog Cool down the container with a large amount of water staying away as far as possible Do not inhale toxic vapor/steam and stand against wind

· flash point: 52°C: Highest limit of ignition point: 6.0 : Lowest limit of ignition point: 36.0 : Natural ignition point: 385°C:

OSHA: IB

Harmful combustion product-It may produce toxic carbon oxide when decomposed by heat

5. Accidental Release Measures



Direct spillage-Isolate igniter. Stop spillage if possible. Use water to diminish vapor. If spillage is not substantial, use sand or other absorbent and keep inside the container for post action. If substantial spillage occurs, make a hilly spot far from the front of the point of leakage to coop in for post action No smoking, spark or fire in dangerous area. Stop access of unnecessary personnel and isolate dangerous area and restricted area. Keep in a dry, clean and proper container for further step after cleanup. Do not let the leaked material drain into sewer
Soil leakage-Prepare a spot for cooping in such as lagoon, pond or drain pit. Cooping in the hilly spot using soil, sandbag or polyurethane or concrete.

6. Handling and Storage

Abide by all the regulations of central and local governments in storing this product Isolate this product from materials which cannot be in the same place.
Store in a manner noted in the manual of CERAMOND N ii, Keep in a cool and dry and dark place after sealing

7. Exposure Controls, Personal Protection

Ventilation-Mount a general type diluted ventilation equipment to meet the regulation for exposure limit. Ventilation equipment must be an explosive proof type.
Eye protection-Workers (maturing mixture and coating job) should wear safety goggle against dust to prevent eye exposure from this material.
Emergency washing-The employer should make washing or rinsing facilities equipped near the workshop in case there is a possibility of workers' eyes or skin exposure to extraneous matters.
Protective clothes-Workers (maturing mixture and coating job) should wear appropriate (non-permeable) protective clothes and equipment to prevent possible skin exposure to extraneous matters.
Protective Gloves-Workers (maturing mixture and coating job) should wear protective gloves to avoid exposure to extraneous matters.
Protective apparatus for respiration-Wear masks containing active carbon and approved by Occupational Safety and Health Agency (ex. 3M No.9913 for dust and mist, dust proof-76 model)

8. Physical and Chemical Properties

- Look: Colored Liquid with distinctive alcohol smell
- Molecular weight: NA
- Molecular formula: NA
- Boiling point: over 65°C (149°F)
- Melting point: over -94°C (-137°F)
- Steam pressure: under 97.25 mmHg(at 20°C)
- Steam density: NA
- Gravity: 1.23~1.41 (at 25°C) / CM N ii BP/BBP/S/AS, 0.95~1.05(at 25°C) / CM N ii X/T/T30
- PH: 4~6(at 20°C)
- Evaporation rate: NA
- Viscosity: 7~11 cP (at 25°C) / CM N ii BP/BBP/S/AS, 5~7 cP(at 25°C) / CM N ii X/T/T30
- Solubility (water): good
- Solubility (solvent): Soluble with organic solvent such as alcohol, ketone

9. Stability and Reactivity

Reactivity-Exothermic reaction was noted when maturing (maturing CERAMOND N ii A liquid with B liquid). Stable at room temperature and at atmospheric pressure after maturing
Conditions to avoid-Prevent heat, spark or other things which might ignite. Vapor may explode. Avoid vapor ingestion or contact to skin. Avoid water pollution caused by leakage
Harmful decomposition products-Thermal cracking may emit harmful carbon oxide
Polymerization reaction-Polymerization reaction when aged(mixture of CERAMOND N ii A liquid and B liquid) no dangerous polymerization reaction reported under normal temperature and pressure polymerization reaction when vulcanized(dry and vulcanize after applying)



10. Toxicological Information

This information on toxicity is based on 100% methanol standard. Toxicity and irritation shall be referred as below the based standard for CERAMOND N II with about 10% of methanol.

- ① irritation information -20mg/24hours, skin-rabbit: normal -40mg, eye-rabbit: normal -40mg, -100mg/24hours, eye-rabbit: normal
- ② toxicity information-mutation information: RTECS - effect on reproductive system: RTECS
- ③ Carcinogenesis: NA
- ④ Effect on parts: irritation-skin, eye
- ⑤ Acute toxicity level: comparatively not toxic when inhaled weak toxicity by skin absorption and adoption
- ⑥ Effect on target organ: inhibitory on central nervous system; nerves toxicity
- ⑦ Cases which may increase danger when exposed: one who has trouble on kidney, eye or skin
- ⑧ Health - Skin contact: irritant/anesthetic/tetanospasmin - Acute exposure- On CERAMOND N ii liquid may cause irritation
may acidize metabolism, affect eye and central nervous system as inhaled acutely when absorbed by skin

11. Ecological Information

- Environmental Effect Index (0~4): NA
- Acute water toxicity: NA
- Resolvability: NA
- Logarithmic (BCF): NA
- Logarithmic Octane/water distribution coefficient: NA

12. Disposal Considerations

Abide by all the regulations of central government and local government in case of disuse Proper disposal is incineration. After complete combustion, remaining(ceramic particle) should be handled by regulated disposal procedure Incineration should be done with approved incineration equipment CERAMOND N ii contents should be completely removed in case of discarding container the product

13. Transport Information

In case of transportation, completely seal the container to prevent leakage. Preventive method for falling, conduction and shock should be prepared. Cooling equipment, air conditioner and shading sheet should be mounted to prevent extreme increase of temperature of the product

14. Regulatory Information

Occupational Safety and Health Act: Organic solvent class 2, Allowable Concentration
Fire Services Act: Dangerous Goods Class 4 Alcohols

15. Others

SDS for toxic and dangerous materials among ingredients are included additionally.
Notice on storage, handling and usage during supply from Rhitz New Materials Technology Co. Ltd. is added.
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