

# Dust Suppressant Agent

Nitto Denko India Pvt. Ltd.

## Company Name: Nitto Denko Corporation

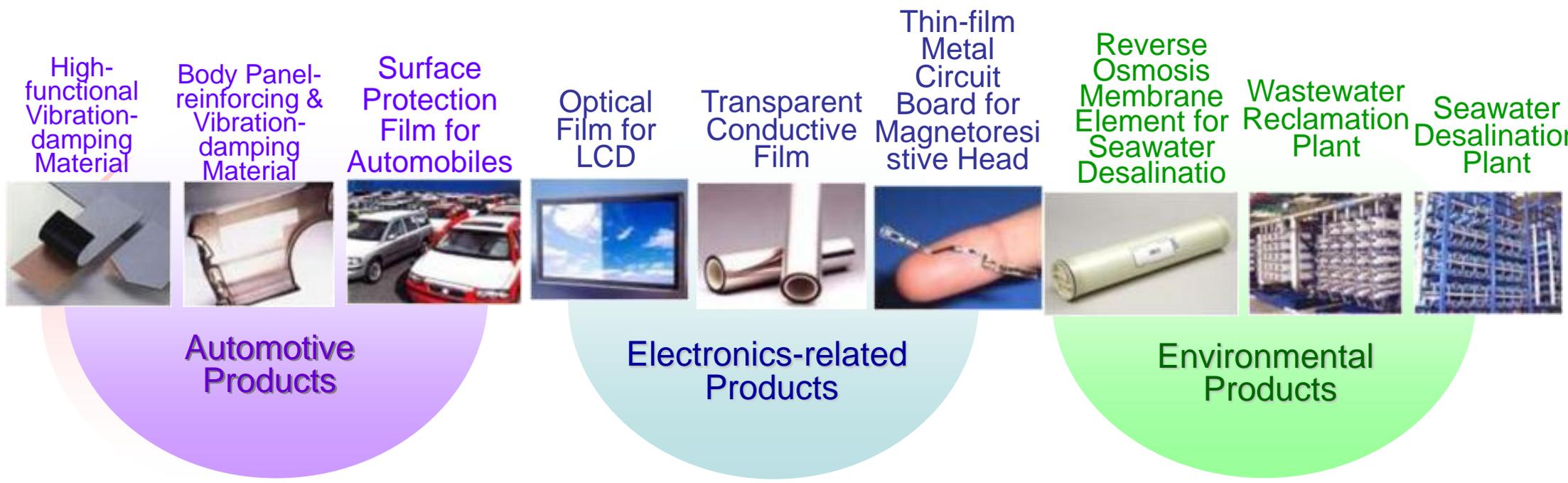
Established : October 25, 1918  
Head Office : Osaka, Japan  
Headcount : 28,885 (Consolidated) (1)  
Net Sales: 806.4 billion JPY (504.0 B INR) (2)

(1) As of Mar. 31, 2018 (2) Actual for FY2018 ending Mar. 31, 2019 <JPY=0.625INR>



Hideo Takasaki  
President, CEO & COO  
Representative Director

**Nitto offers 13,500 products to 70 industries**



## Pollution

- Increasing number of vehicles
- Worst air pollution in the world.
- Increase asthmatic patients.



## Security

- Data accessibility.
- Linkage of records.



## Medical

- Accessibility to basic services.
- Industry size (E) 2018 - \$6 Bn



Social Issues

## Water

- Limited reservoirs.
- Drinking water crisis.



## Electricity

- Inconsistent supply.
- High transmission loss.



## Air pollution level in India became worst in the world

FY2018 PM2.5 value by city wise Source: Greenpeace (WHO health standard  $10 \mu\text{g}/\text{m}^3$ )

| City    | Country   | PM2.5 value ( $\mu\text{g}/\text{m}^3$ ) |
|---------|-----------|--|
| Gurgaon | India     | 135.8                                    |
| Beijing | China     | 50.9                                     |
| Jakarta | Indonesia | 45.3                                     |

| City    | Country  | PM2.5 value ( $\mu\text{g}/\text{m}^3$ ) |
|---------|----------|--|
| Bangkok | Thailand | 25.2                                     |
| Seoul   | Korea    | 23.3                                     |
| Tokyo   | Japan    | 13.1                                     |

Among worst 5 cities, 4 cities are occupied by Delhi/NCR and among worst 20 cities, 15 cities are occupied by India.

The pollution level in Gurgaon is 10 times higher than that of Tokyo and 2.5 times higher than that of Beijing.

Out of 7M death caused by air pollution in the world, 1.24M death are in India. (WHO report)

The pollution sources are exhaust gas, constructions, field burning etc.



**No effective countermeasure in India yet.**

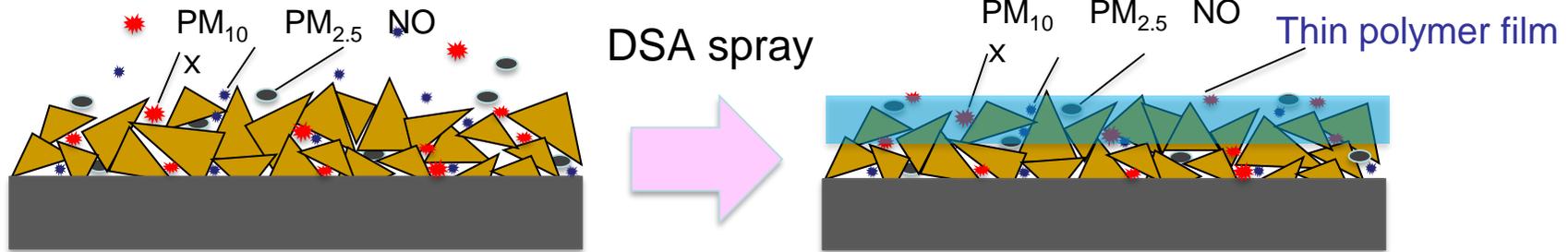
Delhi situation (Oct. 2017)



# DSA: Dust Suppressant Agent



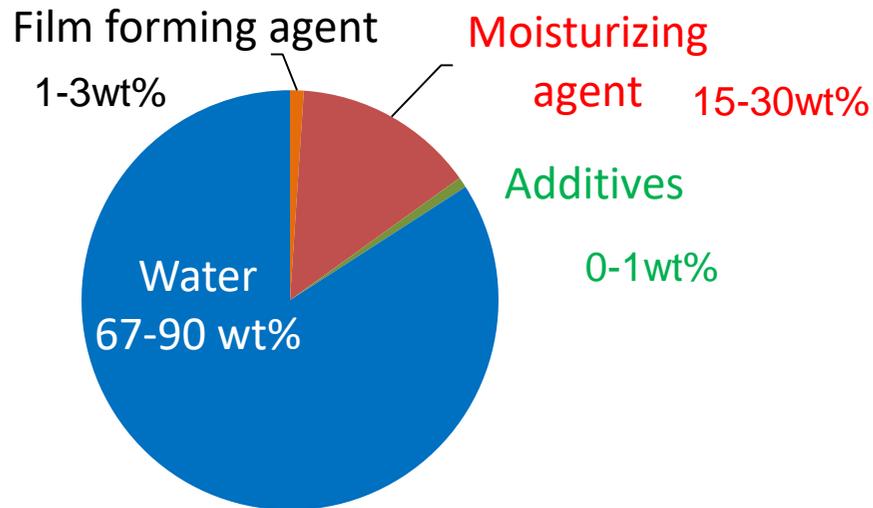
## Design Concept



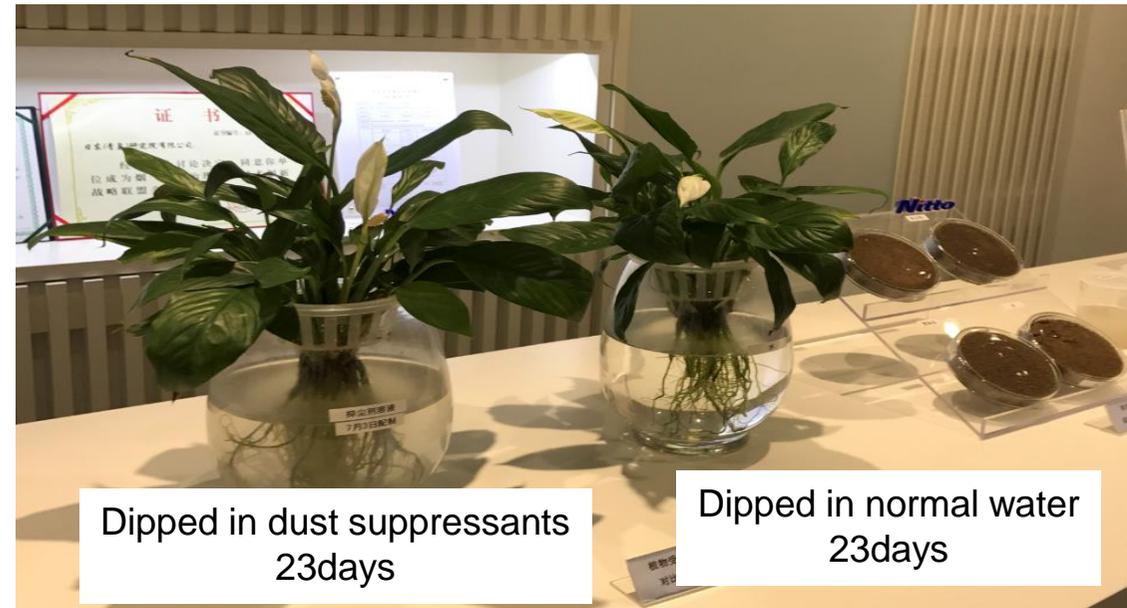
**Prevent the resurrection of dust with film forming after spraying**

## Product

### Composition



**Toxicity: No influence on plant growth**



**Furthermore, 5 fold dilution when using (consists with 95% of water ).  
Non-toxic and Environment-friendly**

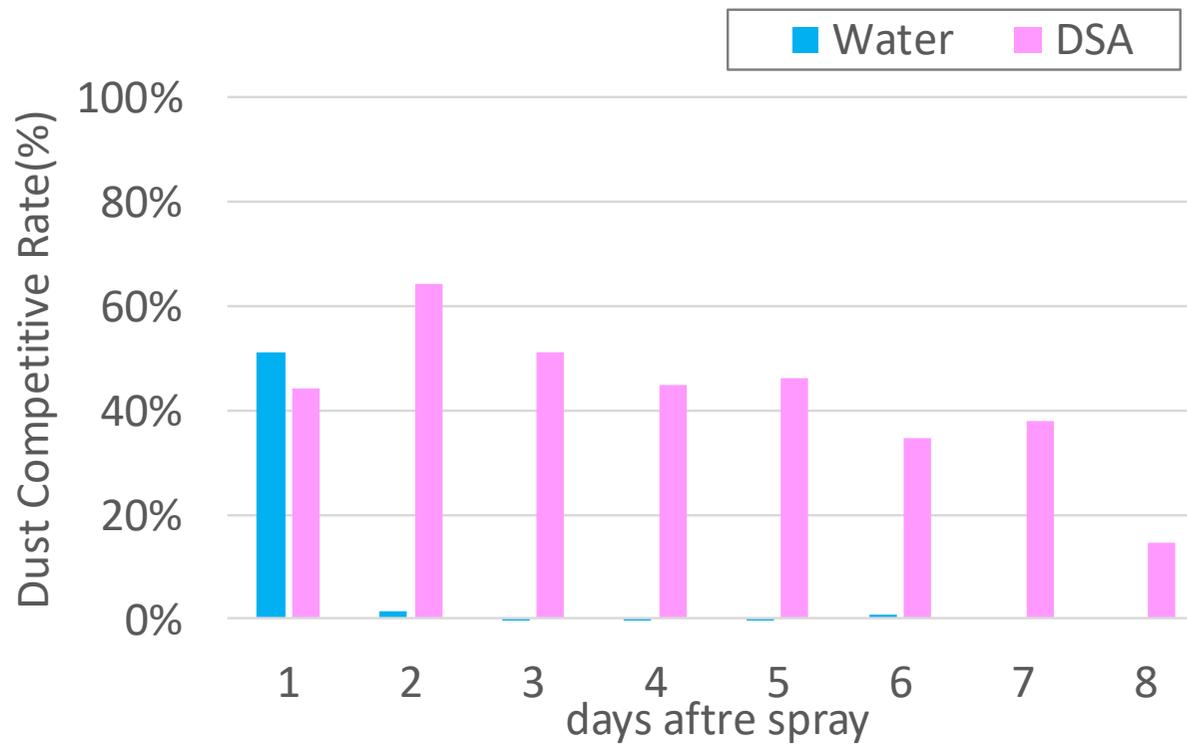
# Field Test

## Overview

Test Area: 500m\*3.5m  
DSA: Diluted 5 times and sprayed @ 0.5 L/m<sup>2</sup>  
Measure site : 1m height above the road.  
Measuring Objects: PM2.5, 10,



## Result

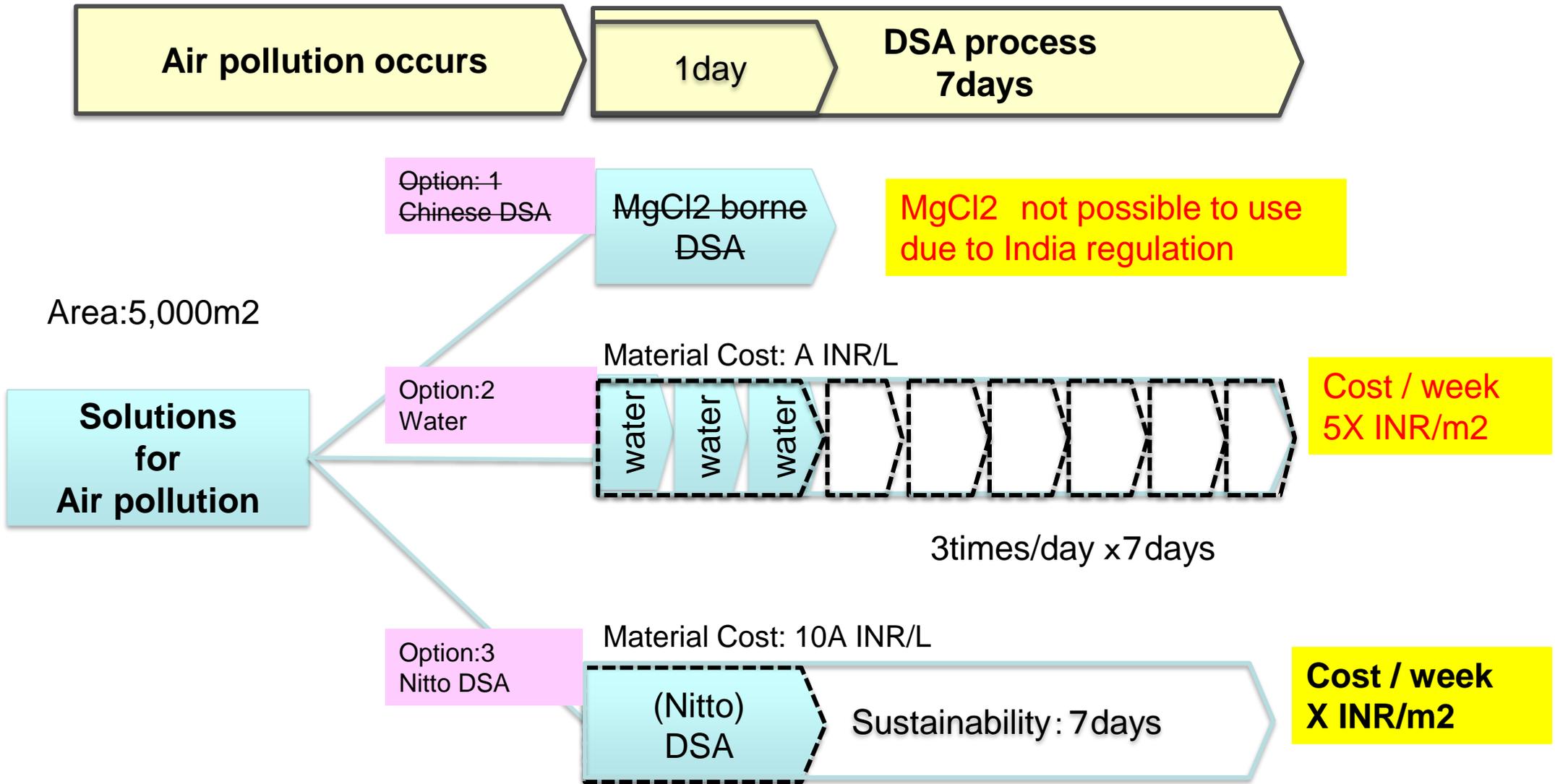


**Water: gone within 1day**  
**DSA: Sustain for 7days**

**Nitto DSA can last for 7days per one time spray  
(water sprinkling lasts for less than 1day)**

# Cost Simulation

Cost for 7days \* Cost includes material and labor



**DSA sustains the efficiency for 7days.  
More cost advantage compared to water sprinkling.**

## Approval (NEERI)

## MSDS (Material Safety Data Sheet)

**Draft Final Report**

**Pilot Study on Evaluation of Dust Suppressant for Control of Road Dust Emissions**

Project: CSIR-NEERI Study  
Pilot Study on Evaluation of Dust Suppressant for Control of Road Dust Emissions  
Draft Report - June, 2019

**Sponsor: Nitto Denko India Private Limited, Gurugram**

**CSIR-National Environmental Engineering Research Institute (NEERI), Delhi Zonal Centre, New Delhi 110028**

**CSIR- Central Road Research Institute (CRRRI) Delhi- Mathura Road, New Delhi- 110025**

**June 2019**

**Plate 2.5: Photographs Showing Application of Dust Suppressant at the Selected Road Corridors Inside Nitto Campus and on Main Road**

The PM concentrations were monitored using GRIMM Aerosol Dust Monitor placed at a distance of 1 m from the selected road corridor. Background concentrations were measured daily at selected road sections when there was no vehicle movement.

**2.3.3 Results of Experiment at Nitto Denko Site**

The PM monitoring is carried out for seven days at Sites A and B under two different conditions i.e. without vehicle movement (Baseline Concentration) and with vehicle movement during the study period.

|  |   |   |
|--|---|---|
| <p>Page 1</p> <p><b>Material Safety Data Sheet (DSA) (MSDS)</b></p> <p><b>1. Identification of substance:</b><br/>Product name: Dust suppressant Agent<br/>Manufacturer/Supplier:<br/>Company Name: Nitto Denko India Pvt. Ltd.<br/>Address: Plot No. 177-178, Sector - 5, IMT Manesar<br/>Zip Code: 122050<br/>Phone: 0124 422 1000</p> <p><b>2. Composition /Data on components:</b><br/>Chemical name: Dust Suppressant Agent<br/>Molecular weight: 323.19<br/>Composition of harmful substances: Harmless<br/>CAS 64741-65-7<br/>Composition: Marine minerals 10% to 80% of the 10% of the mint alkali 2% 2% synthetic pigments other composites</p> <p><b>3. Hazards identification</b><br/>Dangerous nature of the identification: No risk<br/>Pathways: Ingestion<br/>Health hazards: No harm<br/>Environmental hazards: No harm<br/>Explosion Hazards: Noncombustible</p> <p><b>4. first aid measures:</b><br/>Skin contact: With surfactant can<br/>Eye contact: With surfactant can<br/>Inhalation: Inhalation smell, harmless to human body<br/>Ingestion: Let the victim drink plenty of water, induce vomiting, seek medical advice immediately</p> <p><b>5. Firefighting measures</b><br/>Hazardous characteristics: Noncombustible<br/>Hazardous combustion products: No<br/>Firefighting methods and extinguishing agents: Noncombustible<br/>Fire Precautions: Noncombustible</p> | <p>Page 2</p> <p><b>6. Release measures</b><br/>Release measures: Looking for specialized storage appliance paint store</p> <p><b>7. Protection measures</b><br/>Protection measures: Should not be thrown away, it should be stored in chemical waste area<br/>Spillage: With water and cleaning agent plus waste cloth to wipe correctly into chemical waste dumpster</p> <p><b>8. Storage operations</b><br/>Storage operations: No special requirements<br/>Conditions: No special requirements</p> <p><b>9. Controls / worker protection</b><br/>Allowable concentration: No information<br/>Permissible exposure limit: No information<br/>Respiratory protection: Unlimited<br/>Skin protection: This product has a corresponding wear masks odor, is Harmless<br/>Eye protection: Harmless<br/>After use, wash with water</p> <p><b>10. Chemical Properties:</b><br/>Physical state: Colorless Liquid<br/>Boiling Point (°C): 130° C<br/>Melting Point (°C): 130° C<br/>Flash Point: Noncombustible<br/>Thermal decomposition: 500 °C</p> <p><b>11. Reactivity</b><br/>Hazardous Polymerization: Harmless</p> | <p>Page 3</p> <p><b>12. Environmental information:</b><br/>Ecological information: be careful and reasonable use of the product<br/>Other ecological information: be careful and reasonable use of the product</p> <p><b>13. Regulatory information:</b><br/>Regulatory information: observes all federal, state and local regulations<br/>Product is Non-Hazardous in terms of transport regulation. It is not covered by international regulation on the transport of environmentally hazardous substances / marine pollutant: no</p> <p><b>14. Other information:</b><br/>Other information: believed to be accurate as of the date issued. However, we do not accept any liability for any other warranty, express or implied, with respect to the use of this product, and we assume no liability resulting from its use. Users should determine the suitability of the information for their own use. The company shall be liable for any claims, losses, or damages resulting from the use of this product, except for profits or any special, indirect, incidental, consequential or punitive damages, and any other damages, however arising, even if the company has been advised of the possibility of such damages.</p> |
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## Marketing

Building



Highway



Construction railroad



Collect "User Experiences" to launch business

**Nitto**

Innovation for Customers