

# Dust Suppressant Agent

Nitto Denko India Pvt. Ltd.

## Company Name: Nitto Denko Corporation

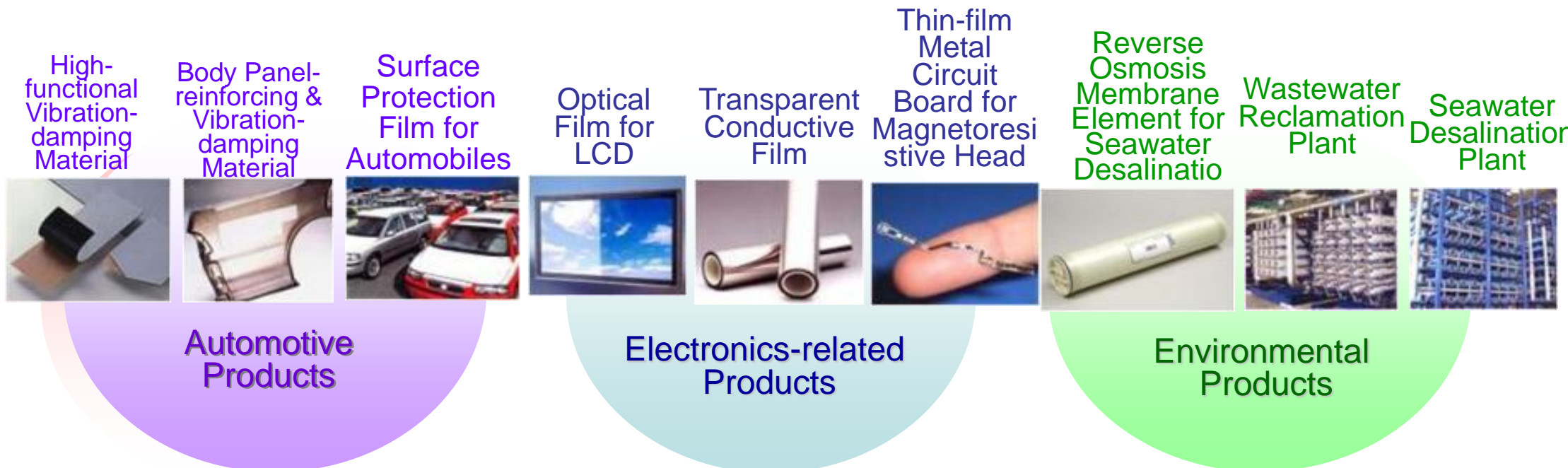
Established : October 25, 1918  
Head Office : Osaka, Japan  
Headcount : 28,885 (Consolidated) <sup>(1)</sup>  
Net Sales: 806.4 billion JPY (504.0 B INR) <sup>(2)</sup>

(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.**

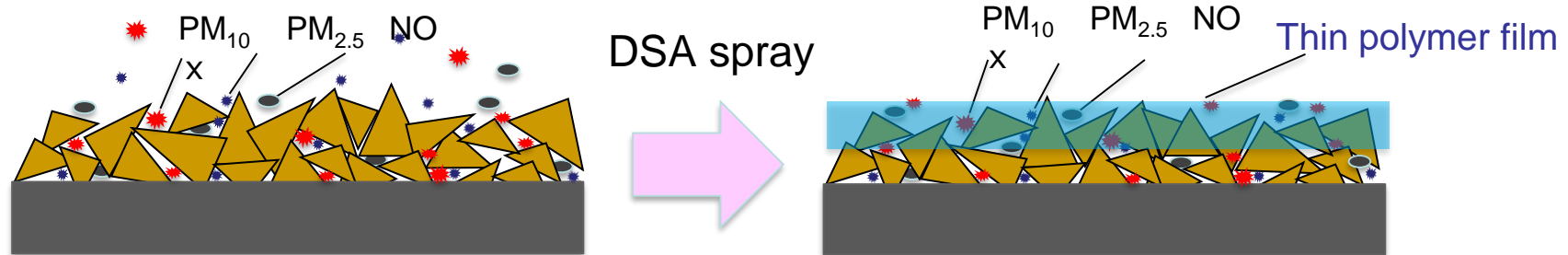
Delhi situation (Oct. 2017)





# DSA: Dust Suppressant Agent

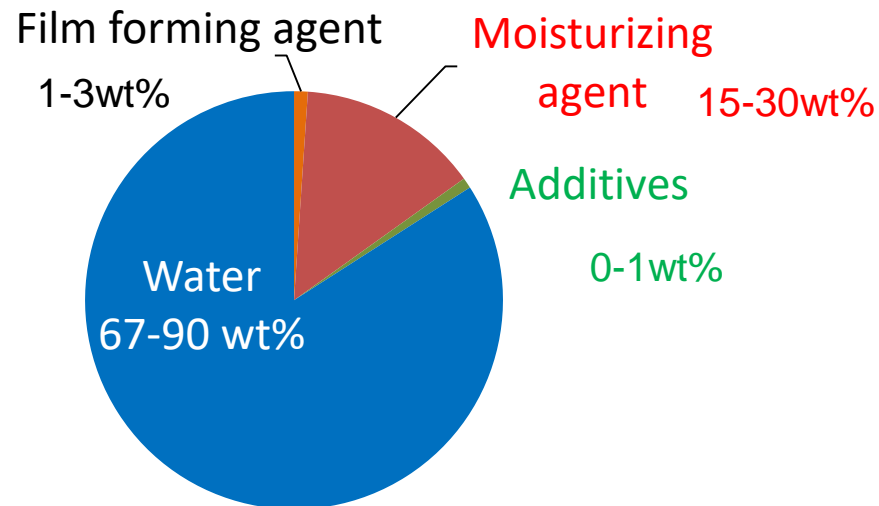
## Design Concept



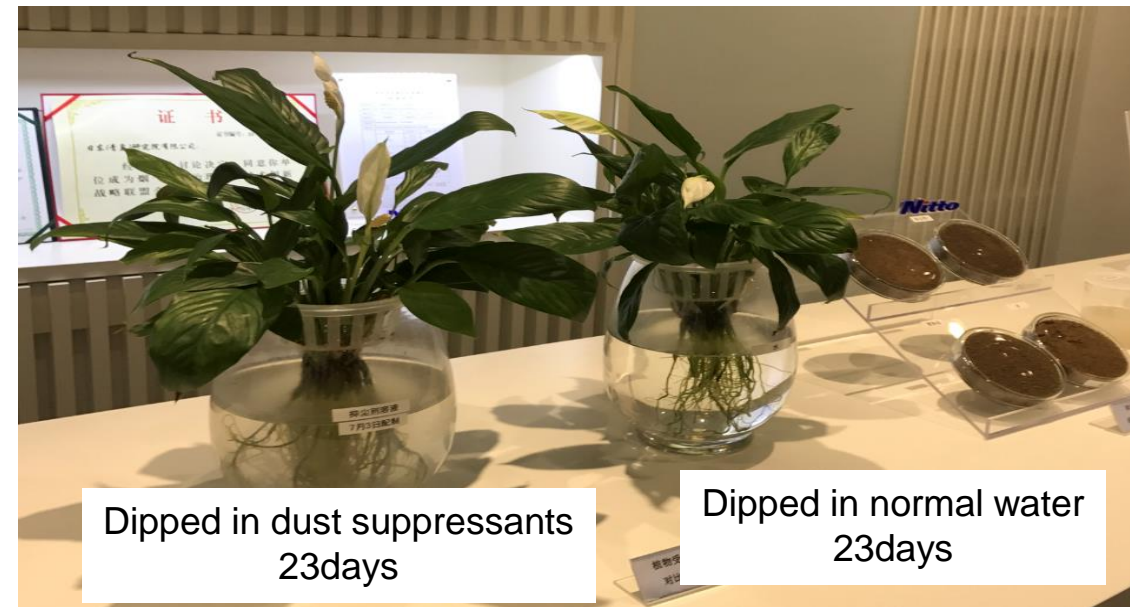
**Prevent the resurrection of dust with film forming after spraying**

## Product

### Composition



**Toxicity:** No influence on plant growth



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

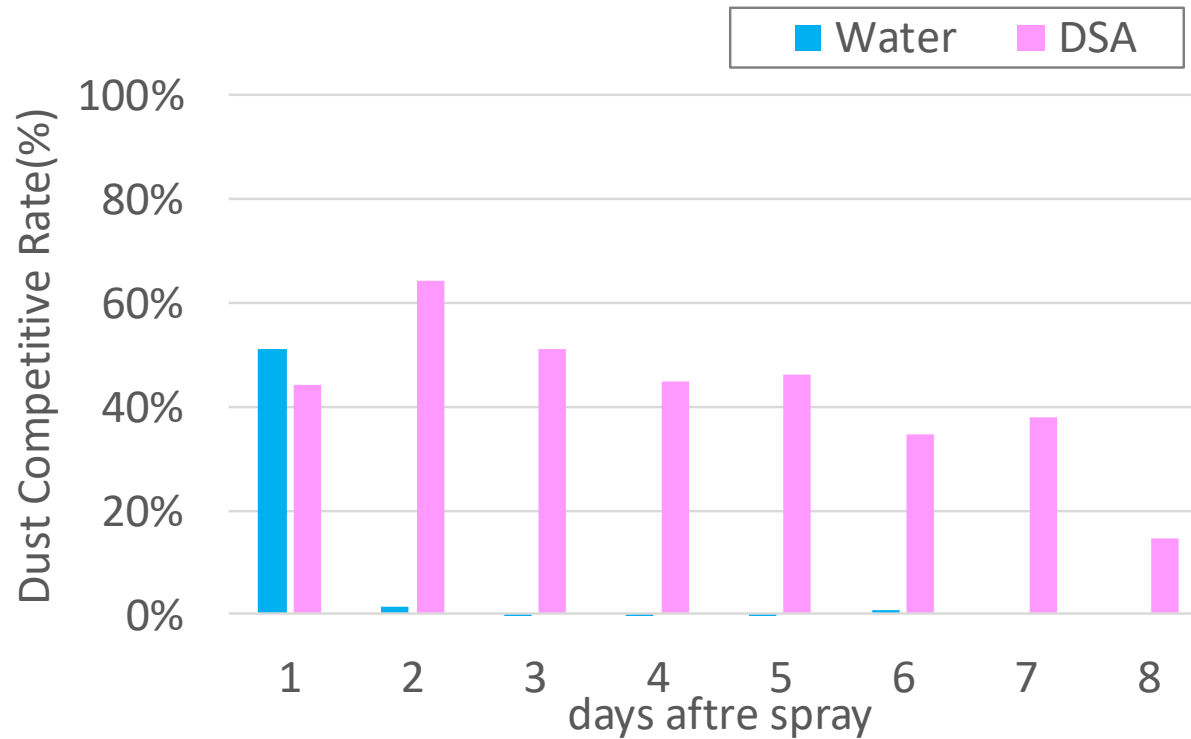
# Field Test

## Overview

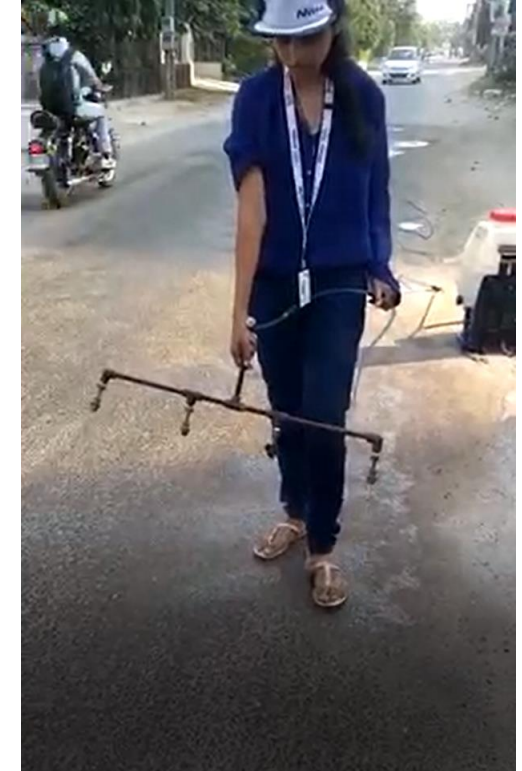
Test Area: 500m\*3.5m  
DSA: Diluted 5 times and sprayed @ 0.5 L/m<sup>2</sup>  
Measure site : 1m height above the road.  
Measuring Objects: PM2.5, 10,



## Result



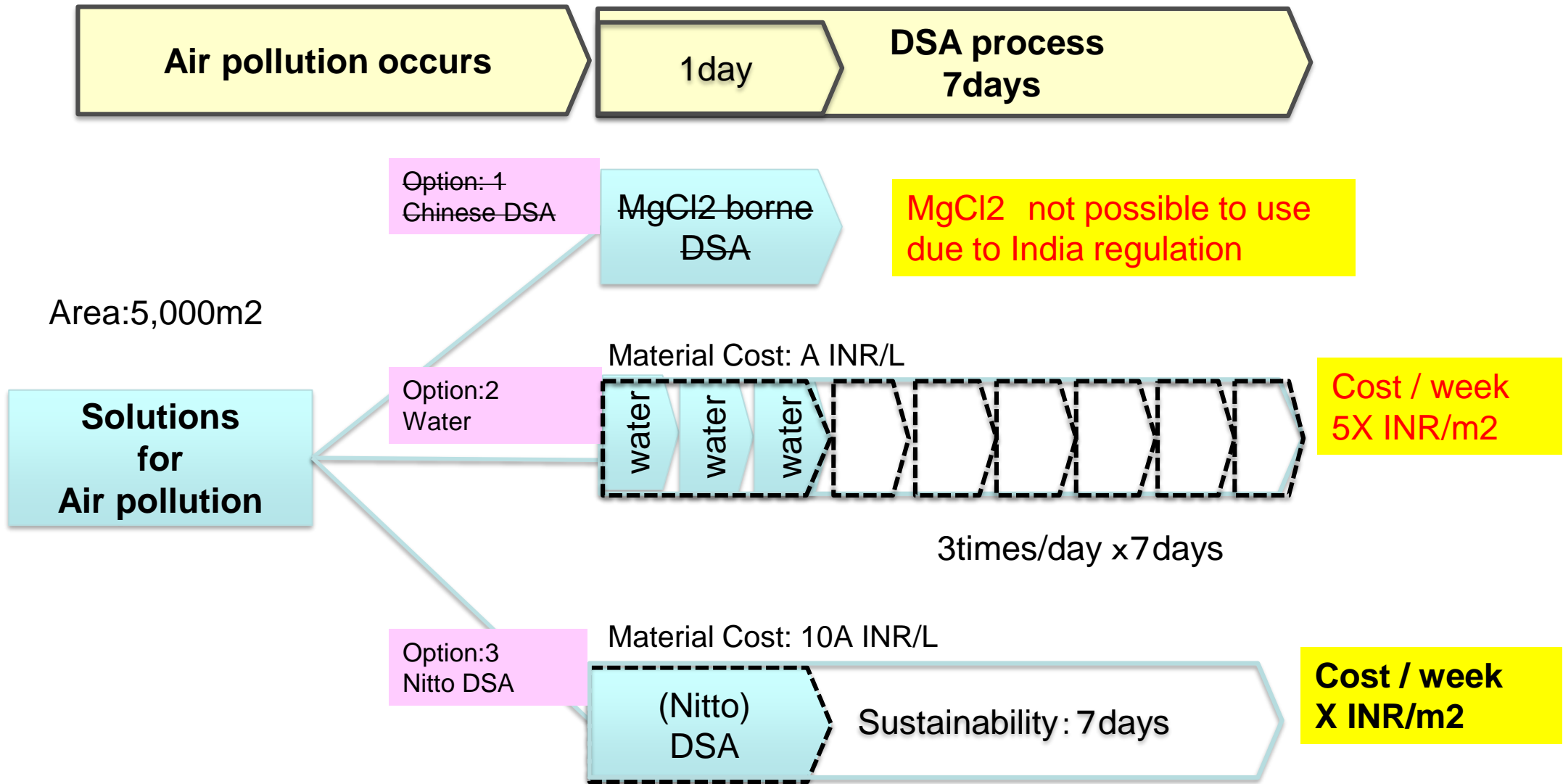
**Water: gone within 1day**  
**DSA: Sustain for 7days**



**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.**

## MSDS (Material Safety Data Sheet)

**Draft Final Report**

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

**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 (CRRl)  
Delhi- Mathura Road, New Delhi- 110025**

**June 2019**

**Site A: CSIR-NEERI Study**  
**Joint Study on Evaluation of Dust Suppressant for Control of Road Dust Emissions**  
**Final Report - June, 2019**

**a. Site A: Road inside Nitto Campus**

**b. Site B: Main Road (In front of Nitto Campus)**

**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.

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<b>Material Safety Data Sheet (DSA) (MSDS)</b>		
<b>1. Identification of substance:</b>  Product name: Dust suppressant Agent Manufacturer/Supplier: <b>Company Name:</b> Nitto Denko India Pvt. Ltd. <b>Address:</b> Plot No. 177-178, Sector – 5, IMT Manesar Zip Code: 122050 Phone: 0124 422 1900	<b>Leak measures:</b>  <b>Risk measures:</b> Looking for specialized storage appliance paint store <b>Protection measures:</b> Should not be thrown away, it should be in chemical waste area <b>Clean up:</b> With water and cleaning agent plus waste cloth to wipe correctly with waste dumper	<b>On:</b>  <b>Less:</b>  <b>Don:</b>
<b>2. Composition /Data on components:</b>  Chemical name: Dust Suppressant Agent Molecular weight: 323.19 <b>Composition of harmful substances: Harmless</b> CAS 64743-65-7 Composition: Marine minerals 10% to 80% of the 10% of the mint alkali 2% 2% synthetic pigments other composites	<b>Storage operations:</b>  <b>Storage operations:</b> No special requirements <b>Hazards:</b> No special requirements  <b>Controls / worker protection</b>  <b>Allowable concentration:</b> No information / m³; No information <b>Controls:</b> Unlimited <b>Fraction:</b> This product has a corresponding wear masks odor, is when Harmless n: Harmless n: After use, wash with water	<b>Other ecological information:</b> be careful and reasonable use of be toxic  <b>Social requirement observes all federal, state and local</b> <b>ris.</b>  <b>n</b>  <b>vn.</b> Product is Non-Hazardous in terms of transport regulation, <b>t</b> is not covered by international regulation on the transport of  <b>Environmentally hazardous substances / marine pollutant:</b> no
<b>3. Hazards identification</b>  <b>Dangerous nature of the identification:</b> No risk <b>Pathways:</b> Ingestion <b>Health hazard:</b> No harm <b>Environmental hazards:</b> No harm <b>Explosion Hazards:</b> Noncombustible	<b>Chemical Properties:</b>  <b>Shape:</b> Colorless Liquid  <b>Melting Point (°C):</b> + 130°C <b>Bolling Point (°C):</b> 190°C <b>Flash Point:</b> Noncombustible <b>Thermal decomposition:</b> 500 °C	<b>on:</b>  <b>licable</b> <b>plicable</b>  <b>ustible</b>
<b>4. first aid measures:</b>  <b>Skin contact:</b> With surfactant can <b>Eye contact:</b> With surfactant can <b>Inhalas:</b> Inhalation smell, harmless to human body <b>Ingestion:</b> Let the victim drink plenty of water, induce vomiting, seek medical advice immediately	<b>Reactivity</b>  <b>Stability:</b> Harmless  <b>Corrosion Products:</b> Harmless	<b>believed to be accurate as of the date issued. However, we</b> <b>warrantability or any other warranty, express or implied, with,</b> <b>son, and we assume no liability resulting from its use. Users</b> <b>investigations to determine the suitability of the information for</b> <b>y shall the company be liable for any claims, losses, or damages</b> <b>lost profits or any special, indirect, incidental, consequential or</b> <b>recovery arising, even if the company has been advised of the</b>
<b>5. Firefighting measures</b>  <b>Hazardous characteristics:</b> Noncombustible <b>Hazardous combustion products:</b> No <b>Firefighting methods and extinguishing agents:</b> Noncombustible <b>Fire Precautions:</b> Noncombustible	<b>Hazardous Polymerization:</b> Harmless	<b>possibility of such damages.</b>

## Marketing

# Building



# Highway



## Construction railroad



## Collect “User Experiences” to launch business



**Nitto**

Innovation for Customers