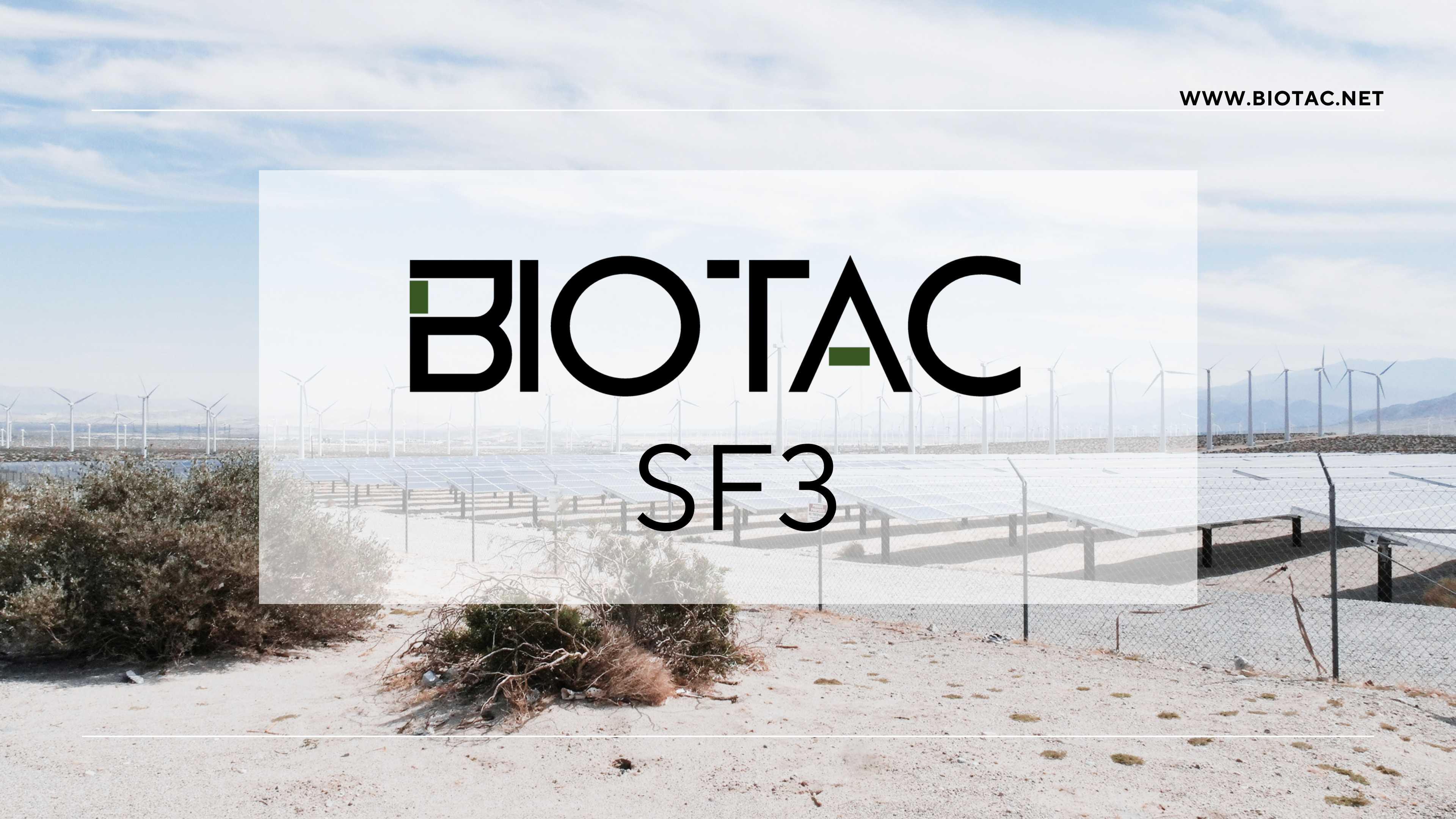


BIO-TAC

SF3



Dust Dilemma: An Endeavor in Tackling Particle Accumulation

The adverse effects of dust encompass a wide range of interconnected challenges. Prioritizing health and safety, mitigating environmental risks, nurturing community relationships, and optimizing economic performance are essential for addressing the multifaceted nature of the dust challenge in mining, solar farms, and industrial settings

Health and Safety Implications



Health and Safety Implications: The Detrimental Effects of Dust on Site Workers and Surrounding Communities. Dust, an inherent by-product of various industrial activities such as mining, solar farms, and industrial operations, poses significant health risks to both workers and the communities residing in close proximity. Inhalation of dust particles can lead to severe respiratory issues, including the development of diseases like silicosis, a lung disease caused by prolonged exposure to crystalline silica. Furthermore, dust can exacerbate pre-existing conditions such as asthma and allergies, compromising the well-being of individuals in the affected areas. These health hazards necessitate a proactive approach to mitigate the risks associated with dust exposure.

Environmental Risks:



Beyond its impact on human health, dust also poses a threat to the environment and delicate ecosystems. Particularly concerning is the presence of toxic substances within dust particles, such as arsenic, lead, and mercury, which can be released into the environment. When deposited onto land, water bodies, or vegetation, these contaminants can disrupt ecological balance and harm plants, animals, and even human populations reliant on these resources. Additionally, airborne dust particles contribute to reduced air and water quality, further compromising the environmental integrity of the affected regions

Community Relations Challenges



The presence of excessive dust in mining, solar farms, and industrial areas can strain the relationship between these operations and the nearby communities. Residents may feel disadvantaged due to the negative impacts of dust on their health and the environment they inhabit. The perception of compromised well-being and environmental degradation can lead to strained community relations, with potential implications for the social license to operate. Therefore, fostering open communication channels, addressing concerns, and implementing effective dust mitigation strategies are crucial to maintaining positive relationships with the affected communities.

Economic Considerations



The presence of excessive dust can disrupt operational activities, leading to production downtime and decreased efficiency. Consequently, companies may incur additional costs associated with implementing ineffective dust control measures, equipment maintenance, and potential fines or legal repercussions. This can impact the overall economic performance of mining operations, solar farms, and industrial areas, highlighting the importance of proactive dust management strategies to ensure sustained productivity and financial viability.

SUSTAINABILITY

Rising Demand for Responsible Practices

These industries are confronted with a growing expectation from consumers, investors, and various stakeholders to adopt responsible and sustainable practices. This shift necessitates the integration of such practices to maintain their social license to operate and attract crucial investments.

Stringent Government Regulations

Governments worldwide are imposing increasingly stringent regulations on industries that are bombarded with issues pertaining to dust operations, specifically targeting the reduction of environmental impacts and the improvement of social outcomes for workers and surrounding communities.

Addressing Climate Change Challenges:

These industries are significantly affected by climate change, including phenomena such as water stress, extreme rainfall events, and desertification. To adapt to these climate-related challenges, industries must embrace sustainable practices that not only reduce their carbon footprint but also enhance their resilience to future climatic uncertainties.

Resource Conservation:

Mines are increasingly recognizing the finite nature of the Earth's resources. To extend the lifespan of these resources and ensure their responsible utilization, mines are actively seeking ways to conserve and manage resources more effectively. Embracing sustainable practices allows mines to play a vital role in responsibly stewarding these limited resources for the benefit of future generations.

SF30 DUST CHALLENGES



ECOSYSTEM

- 1 **Enhanced Dust Control Efficiency**
- 2 **Non-Corrosive and Protective**
- 3 **Biodiversity Preservation**
- 4 **Reduction in Greenhouse Gas Emissions**
- 5 **Lower Carbon Footprint**
- 6 **Drastic Water Conservation**
- 7 **Environmental Safety and Protection**

COMMUNITY

- Enhanced Operational Safety
- Effective Water Resources Management
- Mitigating Impact on Neighbouring Communities
- Promoting Workers' Health and Well-being



Enhancing Environmental and Social Performance through Dust Reduction: Unlocking Long-term Benefits for Mines.



Optimizing dust control expenditure:

Through the implementation of efficient dust control techniques and strategic utilization, mines can curtail the expenses associated with dust mitigation, leading to cost savings over the long run.

Fostering harmonious community relations:

By addressing and mitigating the adverse impacts of dust on neighbouring communities, mines can cultivate stronger relationships based on trust, cooperation, and mutual understanding. This, in turn, facilitates smoother negotiations and diminishes the likelihood of social unrest or conflicts.

Advancing health and safety standards:

By actively reducing dust levels, mines can prioritize the well-being and safety of their workforce, resulting in reduced costs such as insurance premiums and training expenditures.

Promoting production efficiency:

By effectively managing and mitigating dust, mines can enhance the overall quality of their production processes while minimizing operational disruptions caused by dust-related issues

Aligning with local and international regulations: Earth Alive provides comprehensive support to mines, ensuring their compliance with ecological and labour regulations at both local and international levels. This guarantees that mining operations are conducted responsibly and in accordance with established environmental and social standards.

DISTINCTIVE PRODUCT DESIGNED FOR SUSTAINABLE ENERGY SOLUTIONS.

In situations where roads experience significant stress, the cohesive nature of soil particles is compromised, resulting in the generation of substantial dust emissions. To address this issue, Biotac has carefully chosen highly effective biosurfactant microorganisms that possess remarkable agglomeration properties.



When applied to the ground, the SF3 solution utilizes its natural components to effectively bind soil particles together. This binding action not only helps to retain soil moisture but also forms a sturdy and resilient layer on the surface. By creating this protective crust, the solution effectively prevents dust particles from becoming airborne. Furthermore, this crust exhibits flexibility, allowing it to withstand the heavy traffic typically encountered on all industrial and dust-heavy roads.

Tailored solutions to meet specific needs

Providing Customized Solutions: Recognizing Individual Challenges

At our company, we understand the unique challenges that each customer encounters. Therefore, we offer tailor-made solutions to address their specific needs. Our approach encompasses:

Simple utilization.

1. Substitute the need for daily water applications.
2. Achieve long-lasting quality effects with application intervals of up to 14 days.
3. Versatility:
 - Compatible with diverse soil types, temperatures, altitudes, and weather conditions.Customized protocols are tailored to suit specific regional characteristics.
 - Proven efficacy on roads subjected to varying traffic conditions.
4. Enhanced stability of roads:
 - Increased bearing capacity (CBR).
 - Preserved road permeability.
 - Reduced necessity for grading on unpaved roads.
5. No specialized equipment is required for application.

SP30 demonstrates remarkable versatility, making it suitable for application across a wide range of road types. Whether it be heavily trafficked haulage roads or roads with medium to lighter traffic, including social roads, SP30 proves to be an adaptable and effective solution.

Scientific concept development

A deep understanding of challenges

Meticulous analysis

Careful selection of the appropriate biological mix

Rigorous testing of the solution.

Road Preparation:

- To ensure optimal results, if the roadbed is excessively compacted, it should be scraped to a minimum depth of 50mm.
- A grader is employed to create a smooth and level surface, eliminating potholes and large rocks, thereby achieving a high-quality roadbed.
- This preparation step involves compacting the surface using a roller or, if unavailable, heavy mining vehicles. Prior to application, the surface should be visibly wet (not soaked) to facilitate even product penetration.

First & Second Application:

- Trucks should be adjusted to attain an application rate of 1L per square meter, which should be maintained consistently throughout all applications.
- The primary purpose of the first application is to introduce a substantial concentration of microbes to the road, serving as an inoculation.
- This initial application is administered at a high concentration/every day later for 30 days, the second application is conducted, blended with water at a moderate concentration.
- Depending on soil type and climate conditions, it may be advisable to limit traffic for 1 or 2 hours following the first application.

Maintenance Applications:

- Maintenance concentration and application frequency are determined based on weather conditions and soil characteristics.
- The standard maintenance application is performed every 14 days, blended with water at a low concentration.

Please note that these are general guidelines, and specific recommendations may vary based on site-specific factors and expert consultation.

BIO-TAC

Contact us

Product Proposal | Bio-Fusion

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