

## Explosive Dust Evaluations

Processing very finely-powdered materials can be extremely hazardous. You may have a serious dust explosion risk, and not even know it.

How serious? The dust ignition could be a brief, inconvenient interruption due to the loud noise. Or a devastating incident that destroys all or part of a facility. And as you may have read about, when incidents like this happen, they often result in severe injuries or loss of life.

So what does one do? Where does one start?

*Do you call your insurance company for a review?*

Probably not, most insurance companies don't have the expertise to fully evaluate a dust hazard potential.

*Do you test all the materials your site processes?*

You could, but that's an very expensive and time-consuming undertaking, that is often not necessary.

*Do you review OSHA and NFPA and other references, and try it yourself?*

That is probably not the best use of your resources or time.



Fortunately, Isosceles can perform an expert review of the explosive potential of organic and inorganic materials that you process. By employing our custom software, EXPOSÉ (**EX**plosive **P**otential **S**creening **E**valuation), reviews can be accomplished rapidly and accurately.

The software is based on various criteria, gathered together from a wide range of sources: US OSHA, EU Agency for Safety and Health at Work, NFPA 654, and FM Global, to reference a few\*. The questions and site observations - and answers and notes - are all tabulated and weighted. This gives a score to a range of topics: sieve size, Kst value, housekeeping, ventilation; even product MSDSs.

This gives you a detailed risk evaluation of the process, with items of concern highlighted in **red**.

The risk for each rubric is categorized as *Low, Medium, or High*. The report identifies gaps and directs you towards items that may need addressing, such as improved housekeeping, or actual Kst testing of certain materials.

Please contact us at: [Info@theISOgroup.com](mailto:Info@theISOgroup.com) for more information.

Dust Ignition Hazard Review		by Mark Patton	
Q1	Is organic powder or finely powdered material processed in addition to noncombustible inorganic?	Answer: Yes, 2 organic materials	Comments: No combustible dust process. However, which means the risk of dust ignition or explosion is possible, at the full range of the proper circumstances. As there is a range of products, some of the following comments may not apply across the board to all.
Q2	What percent of the materials processed is organic?	Answer: 10% to 30% of the materials processed is organic. Processing up to ten percent organic content (approximately 10% moisture) is not a dust problem of explosion risk. As there is some risk organic dusts that can become airborne and ignite, but may require additional review under subsequent.	Notes:
Q3	How frequently is organic material processed?	Answer: 1-2 times per month	Comments: Frequently organic material(s) are processed about 1-2 times a month. Processing organic materials at a regular frequency of 1 to 2 times per month reduces the potential for dust ignition or explosion risk. This would usually be considered a "low" level of concern.
Q4	Are most organic materials generally above or below particle size of 400-500 µm (20-40 mesh) maximum?	Answer: Below	Comments: Most organic materials processed are above particle size of 400-500 µm (20-40 mesh). Organic materials 400 greater than 400-500 µm (20-40 mesh) size generally present a low dust ignition or explosion hazard. This is because the particles are too large to readily become fine, and have a smooth surface area compared to their total mass, which makes it difficult to become airborne.
Q5	Has the organic material(s) been tested for explosibility?	Answer: No	Comments: Organic material(s) have reportedly been tested, which is a good practice, to review whether or not a potential hazard exists.
Q6	If the organic materials have been tested, which is the highest Kst value in barney?	Answer: 1.1 (200)	Comments: The organic material(s) tested reportedly have a Kst value (barney) of 1 to 200. This means that dusting the bulk in small quantities, in typical areas, may present a low explosion risk. However, to avoid the dust problem associated with the material, it is recommended to minimize property damage. Consider the use of dust collection systems.
Q7	What is the minimum ignition energy for the organic materials in millivolts (mJ)?	Answer: Not tested	Comments: The organic materials have not been tested for Minimum Ignition Energy. It is recommended a sample be tested.

\*The use of a company or agency name does not imply there is an endorsement from them, or relationship with them.