


2022

COMBUSTIBLE DUST INCIDENT REPORT

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**TWO INJURED
IN TITANIUM
DUST EXPLOSION
AT AEROSPACE
MANUFACTURER**

Niles, Ohio

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**THREE INJURED IN
ALUMINUM DUST EX-
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**DUST
SAFETY
SCIENCE**

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LETTER FROM THE AUTHOR

DR. CHRIS CLONEY

Managing Director, DustEx Research Ltd.



Every 20 years we forget about dust explosion hazards...

Did you know that the first U.S. textbook dedicated to technical assessment of dust explosions was written in 1922 - or that the first U.S. regulation for sugar dust was published in 1924?

The textbook by Price and Brown, reports explosions in grain mills, dextrine, chocolate, sugar, rubber, aluminum, spice, linseed meal, cottonseed meal, paper, cork, linoleum, sulfur, wood and coal processes to name a few. This was part of a period of extensive combustible dust activity that was triggered by major explosions and lasted from 1910 to 1930.

But then the activity stopped... people moved on... and maybe forgot?

The next period of extensive combustible dust activity in the U.S. was from the 1970s to 1990s and was triggered by seven grain elevator explosions from December 1977 to January 1978 (tragically killing 62 and injuring 55). Expert panels were convened, incident investigations completed, global research programs rolled out, symposiums compiled, which eventually led to the OSHA Grain Handling Standard being released.

But by the time of the West Pharmaceutical, CTA Acoustics and Hayes Lemmerz dust explosions in 2003 (combined 7 fatalities and 80+ injuries) the U.S. Chemical Safety Board stated: "Workers and managers were often unaware of dust explosion hazards"... Tragically, we seemed to have forgotten again.

Why does this matter?

Because 2023 marks the 20th anniversary of West, CTA and Hayes and if history repeats itself it also marks the time when we will begin to downplay the risk, let diligence on combustible dust safety slide and start to forget about the hazards again.

It is my sincere hope that by publishing this report every year we can break this trend. That we can keep the awareness and understanding of dust explosion hazards high. And that we can steer towards our goal of at least one year with zero fatalities by 2038 through these efforts.

As always thank you for supporting us in this mission!

Stay safe out there,

Chris

P.S. Have feedback on the incident reporting? Email me at chris@dustsafetyscience.com.

"The subject of dust explosions has not received serious consideration until recent years. In fact no one seemed to have any conception that dust alone could explode."

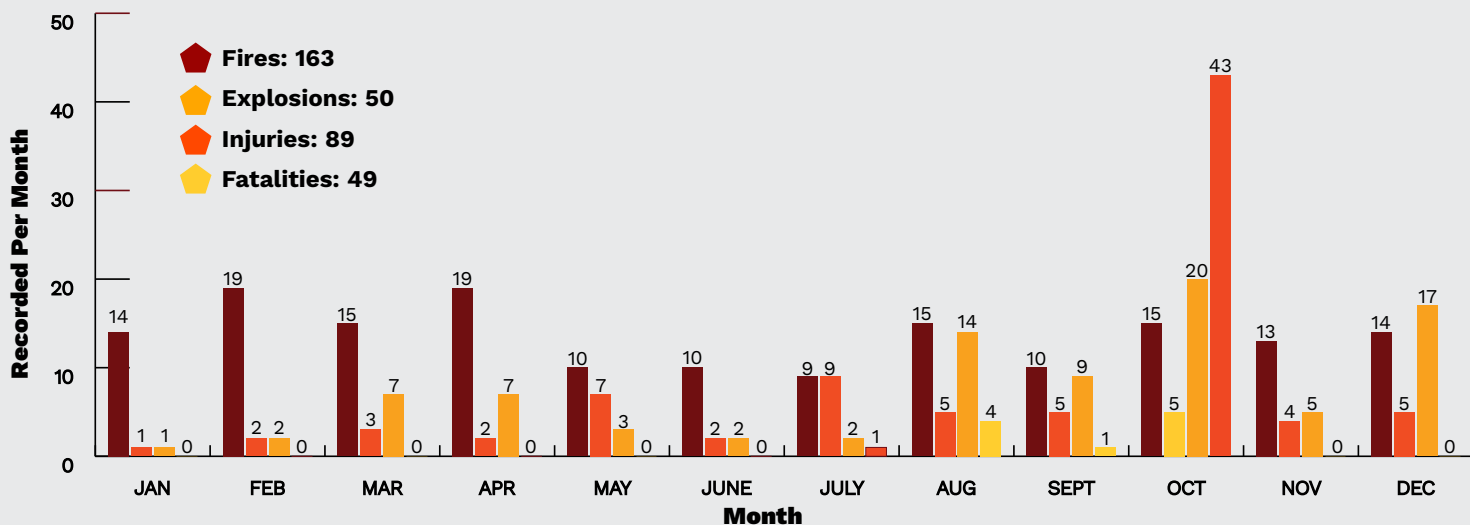
- Price and Brown, "Dust Explosions - Theory and Nature of, Phenomena, Causes and Methods of Prevention". (1922). National Fire Protection Association. (similar statements found in 1977 grain explosion reports and 2006 CSB reports)

INCIDENT DATA OVERVIEW

	UNITED STATES					CANADA					INTERNATIONAL				
	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022	2018	2019	2020	2021	2022
Fires	158	175	116	98	79	17	22	14	8	9	38	53	35	57	75
Explosions	37	37	26	19*	26	4	1	7	3	0	27	37	27	30	24
Injuries	40	42	35	26	24	1	4	2	9	0	73	72	51	180	65
Fatalities	2	1	1	2	1	0	0	0	3	0	21	7	9	64	48

*One explosion in Belle, WV, USA was removed from the 2021 incident data, as a CSB investigation determined that it was not a combustible dust incident

2022 RECORDED INCIDENTS



LOSS HISTORY - UNITED STATES

Loss history from dust explosions in the United States over the last seven years is given in the following table. This data has been collected in the incident database and reported in the 2016 to 2022 combustible dust incident reports.

YEAR	EXP./YEAR	INJ./YEAR	FAT./YEAR
2016	31	22	3
2017	28	43	6
2018	37	30	2
2019	37	27	1
2020	26	23	1
2021	19	19	1
2022	26	21	1
7 year average	29.1	26.4	2.1

This data gives an average of 29 dust explosions per year, 26 injuries and a range from one to seven yearly fatalities over

the last seven years. Note that dust fires are excluded in this analysis.

2022 GLOBAL LOSS OVERVIEW

In 2022, one mine explosion and fire in Amasra, Turkey impacted the data more than any other incident, accounting for over 84% of the year's fatalities:

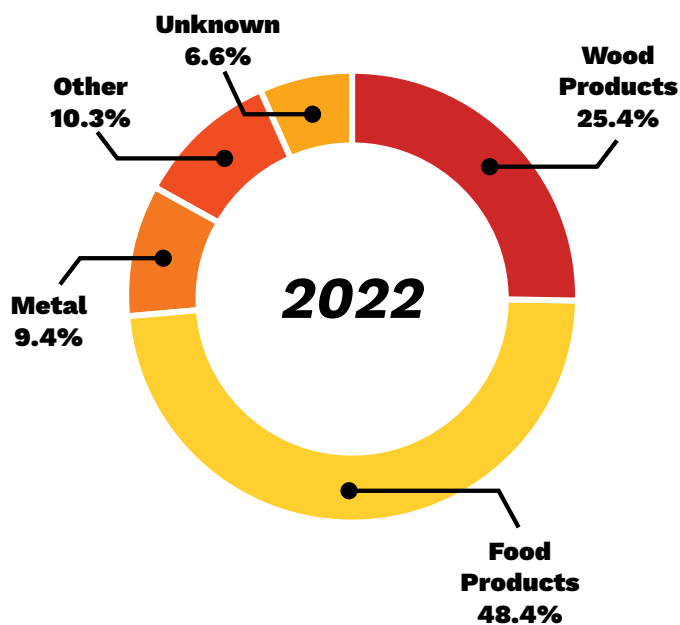
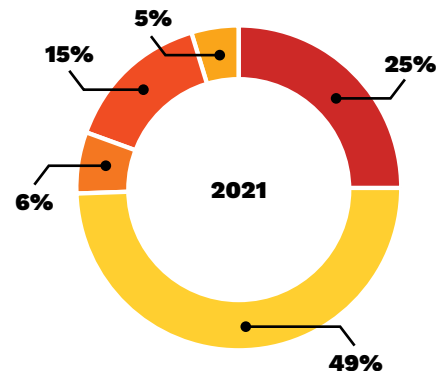
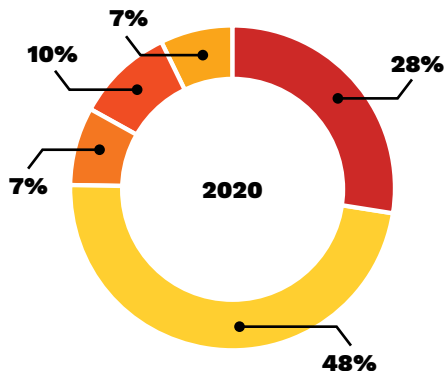
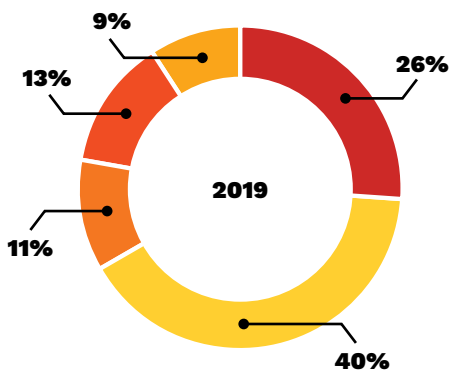
[Explosion at Coal Mine Kills 41 and Injures Others](#) (Amasra, Turkey)

Of this year's injuries, 84% occurred due to explosions and 16% occurred due to fires. For the other fatalities, three came from explosions, and four from fires. Some of the more severe incidents include:

- [Factory Explosion Kills Two, Injures Nine](#) (Kakinada, India)
- [Plant Explosion Injures Two, \\$2M in Damages](#) (Peoria, IL)
- [Two Dead, Four Injured in Steel Plant Fire](#) (Misrata, Libya)
- [Five Injured in Lime Plant Deflagration](#) (Menden, Germany)

MATERIALS INVOLVED

Wood Products Food Products Metal Other Unknown



2022 DETAILED ANALYSIS

Wood	24.4%	Carbon	0.0%
Food	48.4%	Sulfur	0.9%
Metal	9.4%	Textile	0.0%
Coal	5.2%	Other	3.3%
Paper	0.9%	Unknown	6.6%
Plastic	0.9%		

DISCUSSION POINTS

From the global incident data, food and wood products made up 73% of the fires and explosions recorded, but only 29% of the injuries and 10% of the fatalities. The largest-loss food

product incident was a sugar dust explosion that killed two and injured nine more.

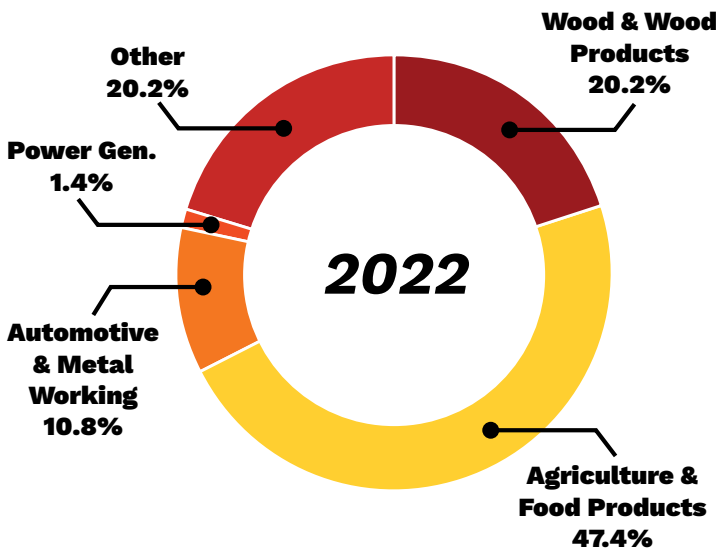
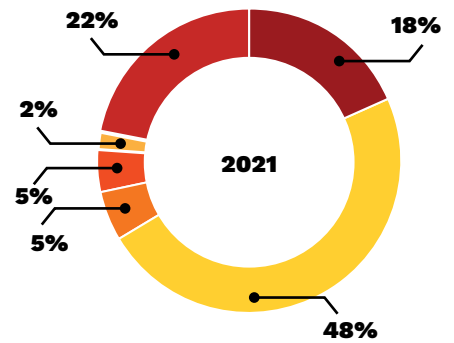
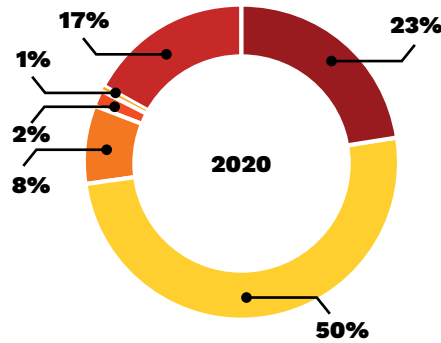
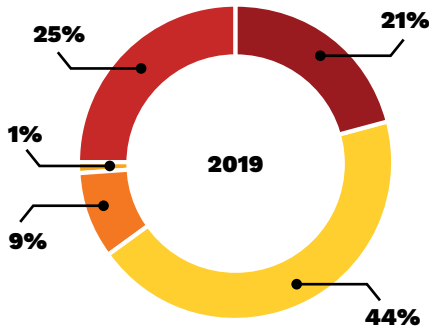
Coal was the most deadly material, accounting for 31% of the injuries and 84% of this year’s fatalities, despite accounting for only 5% of the recorded incidents. This is largely due to the tragic mine explosion in Turkey, but also includes more incidents at power/utility generation sites, a lime plant, and another coal mine. A breakdown of the fires, explosions, injuries and fatalities for each type of material is given as follows:

	FIRES	EXP.	INJ.	FAT.
WOOD	43	9	4	2
FOOD	84	19	22	3
METAL	13	7	22	2
COAL	5	6	28	41
PAPER	2	0	1	0
PLASTIC	2	0	1	0
CARBON	0	0	0	0
SULFUR	1	1	0	0
TEXTILE	0	0	0	0
OTHER	3	4	11	0
UNKNOWN	10	4	0	1
TOTAL	163	50	89	49

The only two metal dust fatalities this year resulted from a steel dust collector fire in Libya. 12 of the metal dust injuries resulted from three separate aluminum dust explosions, and a titanium dust explosion also injured two.

Under the category “other”, 11 injuries came from three separate explosions - one involving foam rubber dust, one cellulose dust, and nine from an asphalt dust explosion.

INDUSTRIES INVOLVED



DISCUSSION POINTS

As shown in the historical data, wood processing, wood products, agricultural activity and food production make up a large portion of the overall fire and explosion incidents. Since 2017 wood and wood products have ranged from 19% to 28% of the incidents, while agricultural activity and food production has ranged from 33% to 50%.

As shown in the detailed incident breakdown, the “other” category includes pulp & paper, ethanol, high schools, and educational facilities. Industries not broken out in the detailed breakdown include rubber products, metal recycling, chemical manufacturing, pharmaceuticals, plastics and waste treatment.

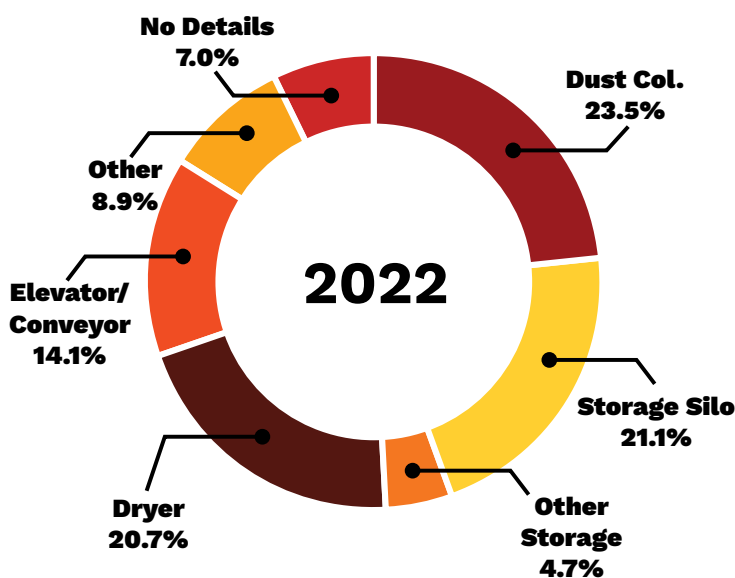
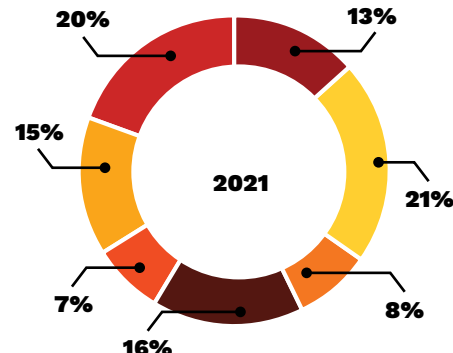
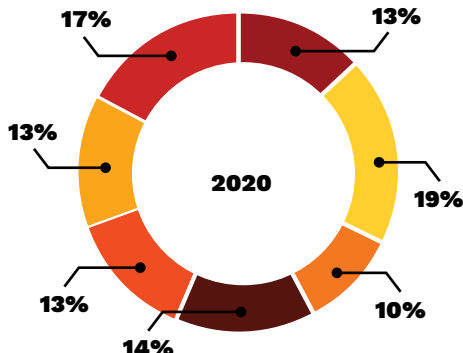
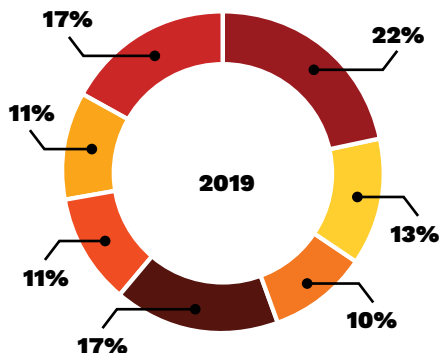
2022 DETAILED ANALYSIS

Wood & Wood Pro.	20.2%	Schools and Edu.	0.9%
Automotive	2.4%	Ethanol	2.4%
Metal Working	8.5%	Power Generation	1.4%
Agriculture	38.0%	Coal Handling	1.9%
Food Processing	9.4%	Mining	0.0%
Pulp & Paper	1.9%	Other	13.2%

Combined, the overall “other” category of industries makes up 29% of the injuries and no fatalities in 2022. Agriculture & food processing, metal working, and power generation made up 22%, 16% and 6% of the injuries, respectively. Coal Handling accounted for 19% of injuries and 84% of fatalities this year, mostly due to the tragic mine explosion in Turkey. Overall, fatalities were recorded in wood and wood products, metal working, agriculture, food processing, and coal handling industries.

EQUIPMENT & CAUSES

◆ Dust Collector
 ◆ Storage Silo
 ◆ Other Storage
 ◆ Dryer
 ◆ Elevator/Conveyor
 ◆ Other
 ◆ No Details



Seven dust collector explosions and four dust collector fires combined to cause 15 injuries and five fatalities in 2022. A full breakdown of fires, explosions, and loss can be seen in the table below:

	FIRES	EXP.	INJ.	FAT.
DUST COLLECTOR	40	10	15	5
STORAGE SILO	35	10	13	0
OTHER STORAGE	8	2	0	0
DRYER	39	5	4	0
ELEV./CONV.	24	6	14	2
OTHER	11	8	11	1
NO DETAILS	6	9	32	41
TOTAL	163	50	89	49

DISCUSSION POINTS

In 2022, dust collectors demonstrated the highest percentage (24%) of combustible dust incidents with 40 fires and 10 explosions reported. Storage silos and dryers were the next biggest sources of incidents, accounting for 21% each.

Of the incidents with known equipment, dust collectors had the highest number of injuries and fatalities, followed closely by elevators/conveyors and storage silos. Dryers, which accounted for the highest portion of last year’s injuries, accounted for only four injuries in 2022.

Of the incidents where equipment is known, five fatalities came from dust collectors, two from elevators/conveyors, and one “other.” These incidents include a metal dust collector fire in Libya, a wood dust collector fire in India, a sugar dust explosion from a conveyor belt in India, and a grain tunnel explosion in Brazil.

Incidents where no details were provided for the equipment made up only 7% of the total reported. However, these incidents made up 36% of the reported injuries and 84% of the reported fatalities, mostly from the one Turkish mine explosion.

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2022 OSHA CITATIONS

ISSUE DATE	INDUSTRIAL ACTIVITY	STATE	VIOLATIONS	INT. PEN.	CUR. PEN.	INSPECTION	STATUS	CITATION LINK
Dec 28	Farm Machinery and Equipment Manufacturing	AL	2	\$23,494	\$15,000	1607167.015	Closed	More Info
Dec 19	Graphic Design Services	PA	1	\$7,458	\$5,594	1607622.015	Closed	More Info
Dec 16	Other Warehousing and Storage	TX	6	\$24,033	\$15,414	1618348.015	Open	More Info
Dec 13	Wood Kitchen Cabinet and Countertop Manufacturing	RI	5	\$19,269	\$19,269	1605425.015	Open	More Info
Dec 12	Prefabricated Wood Building Manufacturing	NH	3	\$13,054	\$4,000	1601660.015	Closed	More Info
Nov 14	Metal Heat Treating	PA	2	\$20,302	\$14,500	1603648.015	Closed	More Info
Nov 7	Paint, Varnish, and Supplies Merchant Wholesalers	NJ	6	\$46,408	\$27,845	1595048.015	Open	More Info
Nov 7	Wood Product Manufacturing	GA	2	\$20,302	\$20,302	1598222.015	Closed	More Info
Oct 14	Wood Kitchen Cabinet and Countertop Manufacturing	NJ	7	\$23,619	\$23,619	1595748.015	Open	More Info
Sep 8	Coffee and Tea Manufacturing	GA	3	\$55,119	\$27,969	1589752.015	Closed	More Info
Sep 2	Secondary Smelting, Refining, and Alloying of Nonferrous Metal	PA	2	\$29,004	\$15,000	1592659.015	Open	More Info
Aug 26	Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing:	FL	1	\$23,310	\$11,655	1588728.015	Closed	More Info
Aug 17	Aluminum Foundries	WI	3	\$32,360	\$16,932	1582937.015	Open	More Info
Jul 22	Cheese Manufacturing	WI	4	\$51,793	\$51,793	1580705.015	Open	More Info
Jul 18	Other Millwork (including Flooring)	PA	12	\$38,112	\$24,000	1578747.015	Open	More Info
Jun 21	Aluminum Foundries	OH	19	\$53,183	\$25,000	1569953.015	Closed	More Info
May 12	Tire Manufacturing	IL	13	\$155,836	\$83,226	1565239.015	Open	More Info
Apr 1	Wood Kitchen Cabinet and Countertop Manufacturing	WI	3	\$7,459	\$3,728	1557236.015	Closed	More Info
Mar 15	Dry, Condensed, and Evaporated Dairy Product Manufacturing	WI	1	\$10,360	\$7,252	1554187.015	Closed	More Info
Mar 11	Wood Kitchen Cabinet and Countertop Manufacturing	NJ	7	\$81,214	\$36,000	1553632.015	Open	More Info
Feb 10	Frozen Cakes, Pies, and Other Pastries	PA	6	\$60,080	\$35,000	1559051.015	Open	More Info
Jan 14	Leather Goods	TX	6	\$20,285	\$12,171	1558535.015	Closed	More Info
Jan 6	Powder Metallurgy Part Manufacturing	CT	49	\$236,201	\$143,000	1542164.015	Open	More Info

Inspections Resulting In Citations: 13
Total Citations: 163
Total Initial Penalties: \$1,052,255
Total Current Penalties: \$638,269
Initial Penalty/Citation: \$6,456
Initial Penalty/Inspection: \$45,750

*Information was collected from OSHA Data & Statistics by searching for “dust” within inspection details from citations made using the General Dusty Clause.



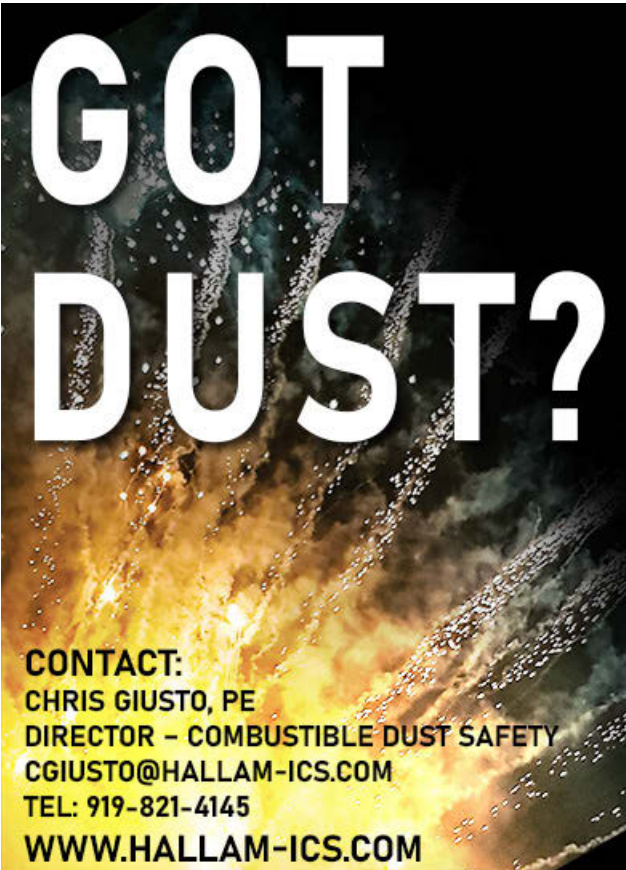
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GRAIN DUST EXPLOSION AT GRAIN ELEVATOR IN CLOVIS, NEW MEXICO

FEBRUARY 2, 2022

One Injury

BACKGROUND

The company involved is an agribusiness headquartered in Omaha, Nebraska and has multiple locations across the United States.

INCIDENT DESCRIPTION

On February 5, 2022, local news reported a fire and explosion at a grain elevator in Clovis, New Mexico.

Fire crews first responded after an employee heard an explosion at around 11:00 a.m. As firefighters reached the top of the structure, there was visible fire in several of the grain elevators and they observed smoke coming from a ground pit that was used to unload grain.

While securing water service, they heard several smaller explosions from multiple points inside and under silos. Multiple blowout doors on the grain legs were blown open and multiple grain legs had visible fire showing.

According to the Fire Chief, a combination of welding work and grain powder accumulation in the ductwork likely led to the explosion and fire.

OUTCOME

One firefighter suffered an arm fracture when his arm was pinned between a hose and railing. He was hospitalized but soon released.

Incident Database: [One Firefighter Injured While Fighting Ductwork Fire at Grain Elevator](#)

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TITANIUM DUST EXPLOSION AT AEROSPACE MANUFACTURER IN NILES, OHIO

OCTOBER 18, 2022

Two Injuries

BACKGROUND

The company involved is an aerospace parts manufacturer in Niles, Ohio. It was founded in 1888, is headquartered in Pittsburgh, Pennsylvania, and manufactures components for jet engines, fasteners and titanium structures for aerospace applications, and forged aluminum wheels for heavy trucks.

INCIDENT DESCRIPTION

On October 18, 2022, local news reported an explosion and fire at an aerospace parts manufacturer in Niles, Ohio.

The incident occurred just after 8:00 a.m. According to the local Fire Chief, the fire ignited as two contractors were removing the titanium dust from a unit at the facility.

As the dust ignited, both contractors were burned, with one receiving facial burns.

The Fire Chief said his department used 15,000 pounds of salt to attempt to put out the fire. The Lordstown Fire Department is equipped with F500 EA, an agent that helps to suffocate a fire, and supplied it to extinguish the flames.

OUTCOME

The two contractors were transported to two different hospital burn units and were listed in stable condition after the incident.

Incident Database: [Titanium Dust Fire at Aerospace Manufacturer Injures Two Contractors](#)



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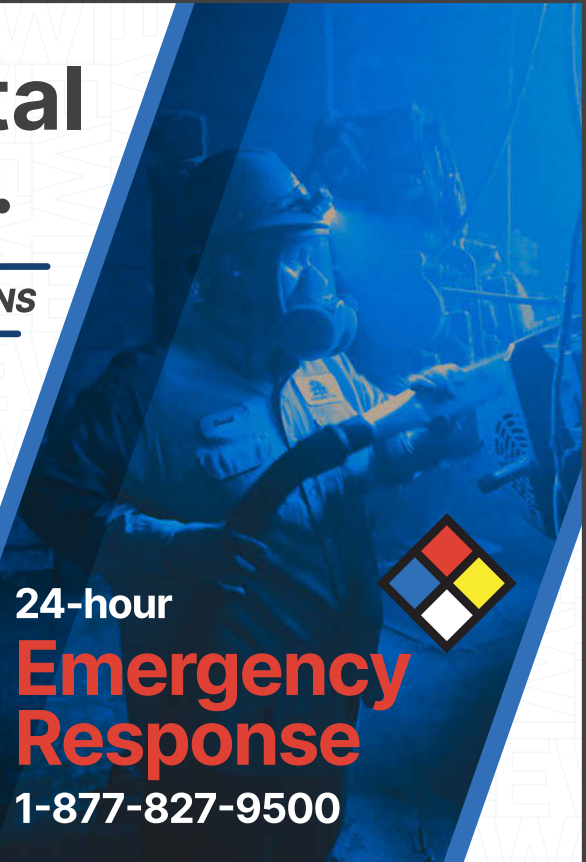
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WOOD DUST COLLECTOR EXPLOSION AT HIGH SCHOOL IN SPANISH FORK, UTAH

MARCH 22, 2022

One Injury

BACKGROUND

The public high school involved is in Spanish Fork, Utah, and serves the Spanish Fork and Mapleton areas. Founded in 2009, it educates over 1,200 students and enrolls over 400 students in each grade.

INCIDENT DESCRIPTION

On March 22, 2022, the local news reported a fire at a public high school in Spanish Fork, Utah.

Fire crews were dispatched about 1:45 p.m. after smoke was observed coming from the dust collector unit attached to the school wood shop. While the fire was contained in the dust collector, smoke spread through the northern parts of the school.

Police and fire crews from Salem, Mapleton, and the Utah State Fire Marshal's Office assisted the Spanish Fork Fire and EMS Department. Firefighters extinguished the blaze within 32 minutes of arriving at the school, according to a press release.

According to investigators, the fire was caused by a welder repairing the dust collector. During the repair, material inside the dust collector ignited.

OUTCOME

One firefighter was treated for burns at a local hospital and later released. School officials said no students were affected by the smoke. Damages were estimated at \$50,000

Incident Database: [Dust Collector Fire at High School Leaves Firefighter With Burn Injuries](#)

ALUMINUM DUST EXPLOSION AT BICYCLE PARTS FACTORY IN FUXING TOWNSHIP, TAIWAN

NOVEMBER 17, 2022

Three Injuries

BACKGROUND

Little information is known about the company involved in this incident.

INCIDENT DESCRIPTION

On November 17, 2022, local news reported a dust explosion at a bicycle parts manufacturer in Fuxing Township, Changhua County, Taiwan.

The flash-fire, which apparently occurred near the dust collection area, seriously injured three employees.

ENHANCED RESEARCH EFFORTS

The incident research team reached out to local contacts in Taiwan to learn more about this explosion and eventually received a one-page government report. The report included images of the integrated baghouse system and incident area, which was translated and included in the incident writeup.



According to the [government report](#), the concentration of aluminum dust in the dust collection bag reached the explosion range. Sparks generated when an iron pipe was being ground were sucked into the aluminum dust cloud, causing the explosion.

The report recommended:

- Using wet dust collection for highly active and reactive metals.
- Not allowing the same dust collection system to be used for grinding of different metals.
- Creating a management of change process for switching from one type of operation to another. A change from grinding aluminum tubing to grinding iron pipe would require management change evaluation.

Our team covered the report as well as discussion of some other considerations such as Thermite Reactions and NFPA requirements for this type of system in [DSS211: Incident Update – 2022 Aluminum Dust Explosion in Fuxing, Taiwan.](#)

OUTCOME

Tragically, three workers were injured in the explosion. One suffered from second to third degree burns on around 80% of his body. A second worker suffered second to third degree burns on about 40% of his body while a third experienced second degree burns on his face and upper arm. All three were hospitalized.

Incident Database: [Three Workers Seriously Injured in Explosion at Bicycle Parts Factory](#)

Incident Database: [Three Workers Seriously Injured in Explosion at Bicycle Parts Factory](#)



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Director of Engineering

COAL DUST EXPLOSION AT POWER PLANT IN THAR, PAKISTAN

MARCH 2, 2022

Five Injuries

BACKGROUND

The company involved is a coal-fired power plant in Thar, Pakistan. Construction began on the 660MW power plant in April 2016. It was originally planned to begin generating 660MW of power by December 2018, but the coal power plant started pumping electricity generated by domestic coal into the national grid in March 2019, starting with 330MW.

INCIDENT DESCRIPTION

On March 2 2022, local news reported an explosion at a coal-fired power plant in Thar, Pakistan.

Management issued a statement confirming that the explosion occurred at 5:00 p.m. in the coal conveyor unit of the plant's 330MW unit 1. Initial reports showed that the explosion occurred in the conveyor belt systems that fed coal into the plant.

The power plant was under scheduled outage where one of the units was already shut down for maintenance whereas the other was operational. During the investigation into the incident, the company shut down the operational unit for safety reasons.

Police and the district administration arrived on site after the incident, but the fire had been put out by that point and the incident remained under investigation.

OUTCOME

Five people were injured in the explosion, which was captured on video. The video can be seen in this [LinkedIn post](#) and this [youtube video](#).

Incident Database: [Explosion at Pakistan Coal-Powered Plant Injures at Least Five People](#)

GOLD PARTNERS



CV Technology

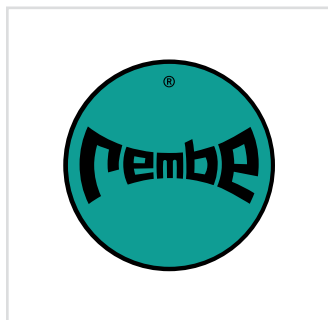
15852 Mercantile Court
Jupiter, FL 33478

Phone: +1 (561) 694-9588
Email: info@cvtechnology.com



CV Technology specializes in explosion protection solutions for the prevention and mitigation of explosion hazards related to combustible dust. Located in Jupiter, Florida, CV Technology manufactures various explosion mitigation products including explosion vents, isolation valves, flameless vents, and chemical suppression equipment.

[LEARN MORE](#)



REMBE® GmbH Safety+Control

Gallbergweg 21
59929 Brilon, Germany

Phone: +49 2961 7405-0
Email: hello@rembe.de



REMBE® is a specialist in explosion safety and pressure relief. As an independent German company, they supply safety systems for industrial plants. REMBE takes a comprehensive approach, primarily developing its own products and providing consultancy and engineering services to customers around the world.

[LEARN MORE](#)



Fagus-GreCon

648 Griffith Road, Suit A
Charlotte, North Carolina 28217

Phone: +1 (704) 912-0000
Email: sales@grecon.us



The GreCon spark extinguishing system is used for preventive fire protection. A spark extinguishing system can detect and eliminate ignition sources before a fire or dust explosion occurs. These systems can be used in filter components, conveyor belts and many other parts of production facilities.

[LEARN MORE](#)



Boss Products LLC

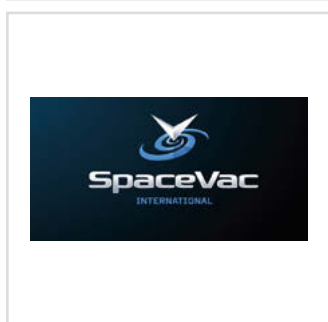
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Beginning in 2012, Boss Products formed with the intent to become the world's leading supplier of fire & explosion protection solutions serving industrial dust collection and related process industries. We are ISO-9001 certified as well as own and operate a UL508A & UL698A industrial control panel shop to provide a range of fire and explosion protection solutions.

[LEARN MORE](#)



SpaceVac International

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SpaceVac is the world's leading high-level cleaning system – enabling operators to remove high-level combustible dust from inaccessible areas from the safety of the ground floor. SpaceVac's innovative cleaning technology can be brought into hazardous and explosive atmospheres using our ATEX certified conductive cleaning system.

[LEARN MORE](#)



SILVER PARTNERS



Airdusco Engineering & Design Services, LLC

3725 Champion Hills, Suite 1500
Memphis, TN 38125

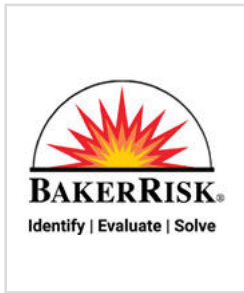
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RoboVent

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Email: info@robovent.com



ALL MEMBER COMPANIES



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Want to connect with industries handling combustible dust?

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CASE STUDIES & EVENTS

Nilfisk



Combustible Dust Mythbusting Guide

[LEARN ABOUT THE EVENT](#)

Nederman



Temple Furniture Case Study - Dust Collection System Upgrade Provides a More Efficient, Cleaner and Safer Work Environment

[LEARN ABOUT THE EVENT](#)

VETS Group & Airplus Industrial Corp



Dust Safety Education Forum

[LEARN ABOUT THE EVENT](#)



FIRE PREVENTION

Spark Detection and Extinguishing System



SINGLE ZONE CONTROL UNIT:
Monitors up to 6 inputs. Able to self-check all wiring and devices.



5-ZONE CONTROL UNIT:
Monitors up to 5 individual zones. Includes 16 inputs and 10 outputs.



SPARK DETECTOR:
Detects sparks, flames, and incandescent material from a variety of processes.



TEST LAMP:
Provides a function check to ensure the cleanliness of the Spark Detector lenses.



FIRE BREAK SHUTTER:
Provides additional protection by isolating a fire from other areas in the system.



WATER EXTINGUISHING ASSEMBLY:
Provides extinguishing after receipt of signal from spark detectors and control unit.



DUST PROBE:
Notifies an increase in the concentration of dust levels which could potentially indicate the rupture of dust filters/bags.



THERMAL PROBE:
Monitors temperature rise within a vessel using thermovelocimetric technology.



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FIRE AND EXPLOSION PROTECTION

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CV Technology prides itself on tailor-made dust explosion and fire protection solutions, as proper strategies are unique to each factory, process and company.





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Inside your dust collection & conveying system ducts are hazards that can cause fires & dust explosions. Choose GreCon spark detection and extinguishing systems to help protect your property and personnel while also avoiding costly downtime.

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- 50 years of innovation in combustible dust explosion protection.
- Venting and isolation to protect personnel and plant.
- Customized indoor/outdoor protection for dust collectors and more.

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The Perfect Recipe for saving time and money...

SpaceVacs range of high-level cleaning systems have long been an innovative presence in the specialised cleaning field. Since launching over a decade ago, the company has developed a range of products designed to help operators clean inaccessible high-level areas from the safety of the ground floor.

The food and drink sector is one area that has been quick to take advantage of the benefits of SpaceVac - taking advantage of the fully conductive line of Div2 certified cleaning systems that the company produces.

Combustible dust is a constant menace throughout the food and drink supply chain. The storage, processing and manufacturing of food and ingredients is one that produces a lot of dusts and waste material which can quickly disperse around the facility and settle in areas such as venting, ducts, on top of machinery and production lines and even stuck to walls and ceilings.

The regular removal of this material is crucial for a number of reasons. In addition to keeping the facilities in a hygienic state suitable for the handling of food, removal of this

waste material removes important food sources for pest infestation - reducing the risk of cross contamination.

More importantly - cleaning of these inaccessible areas also reduces the risk of a combustible dust explosion occurring onsite. Many of the materials and dusts found in the Food space - including sugars, coffees, grains and many more are actually highly combustible and a huge risk to life and property if left unchecked.

One company that has been quick to put SpaceVac to use is Roskam Bakeries. Roskam is a large diversified bakery operation with over two million square feet of manufacturing, warehouse, and office space across six facilities, including 30+ manufacturing and packaging lines. In fast paced environments like this, SpaceVac is the perfect tool for the removal of this dangerous waste material.

The systems diverse range of cleaning accessories provide options for cleaning a range of areas and obstacles and crucially minimises the impact on production. The system can be easily be deployed without the



















need for external access equipment such as scaffolding or scissor lifts, meaning in under two minutes operators can clean within an area as small as ten square metres - meaning production lines can continue to operate during cleaning; maximising uptime and profitability.

Paul Marquard, Project Manager at Roskam Baking Company said: "The SpaceVac equipment has been a tremendous benefit to our company. We are able to reach areas that would otherwise require a lift. Because of this these areas are cleaned more frequently. This is paramount to our operation being the use of a combustible dust is part of the process. This helps us in maintaining NFPA compliance.

We have had great success with the new wall attachments, the ops really like the fact that the hinge allows the attachment to "snug" up to the wall. This is allowing them to clean the walls much faster than in the past."












To find out more about SpaceVac and their range of Div2 rated, conductive cleaning systems - visit the website at spacevac.us

WOOD & WOOD PRODUCTS

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
Feb 22	Clear Lake Lumber Inc.	Spartansburg, PA	Fire	Wood Dust	0	0	Silo	No Details	
Feb 27	West Fraser	Lanett, AL	Fire	Wood Dust	0	0	Dryer	No Details	
Mar 3	Bright Wood Corporation	Madras, OR	Fire	Wood Dust	0	0	Blower Pipe	No Details	
Mar 5	Buchanan Lumber Company	Aliceville, AL	Explosion	Wood Dust	1	0	Dust Collector	No Details	
Apr 3	Country Lane Gazebos	New Holland, PA	Fire	Wood Dust	0	0	Dust Collector	No Details	
Apr 26	Adorn Hardwoods	Elkhart, WI	Fire	Wood Dust	0	0	Dust Collector	\$40,000	
May 11	Trex	Winchester, VA	Explosion	Wood Dust	0	0	Dust Collector	No Details	
Jun 23	North Carolina Plywood	Whiteville, NC	Explosion	Wood Dust	1	0	Dust Collector	No Details	
Jun 25	Kennebec Lumber Company	Greenfield, NH	Fire	Wood Dust	0	0	Unknown	No Details	
Jul 13	Ethan Allen	Orleans, VT	Fire	Wood Dust	0	0	Silo	No Details	
Jul 14	Sauder Woodworking	Archbold, OH	Explosion	Wood Dust	0	0	Sawdust Silo	No Details	
Aug 26	Bridgewood Cabinetry	Chanute, KS	Fire	Wood Dust	0	0	Dust Collector	No Details	
Sep 12	R-Y Timber	Livingston, MT	Explosion	Wood Dust	1	0	Wood Planer	No Details	
Sep 24	Humboldt Redwood Company Lumber Mill	Scotia, CA	Fire	Wood Dust	0	0	Conveyor Belt	No Details	
Oct 26	Crossville Hardwoods	Crossville, TN	Explosion	Wood Dust	0	0	Sawdust Silo	No Details	
Nov 12	Decorative Panels International	Alpena, MI	Fire	Wood Dust	0	0	Wood Dryer	No Details	
Dec 1	No Details	Beauregard, LA	Fire	Wood Dust	0	0	Baghouse	No Details	
Dec 30	Kraftmaid Cabinetry	Orwell, OH	Fire	Wood Dust	0	0	Sawdust Silo	No Details	

INCIDENT SUMMARY - INCIDENTS: 18 | FIRES: 12 | EXPLOSIONS: 6 | INJURIES: 3 | FATALITIES: 0

AUTOMOTIVE & METAL WORKING

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
Feb 8	Harley-Davidson	Springettsbury Township, PA	Fire	Unknown	0	0	Dust Collector	No Details	
Feb 10	West Central Steel Inc.	Willmar, MN	Fire	Metal Dust	0	0	Dust Collector	No Details	
Mar 21	BTD Manufacturing	Detroit Lakes, MN	Fire	Metal Dust	0	0	Dust Collector	No Details	
Feb 28	Jost International	Greeneville, TN	Fire	Unknown	0	0	Dust Collector	No Details	
Mar 15	LDI Industries	Huntley, IL	Fire	Metal Dust	0	0	Dust Collector	No Details	
Mar 25	CoreBrace	Pocatello, ID	Fire	Metal Dust	0	0	Dust Collector	No Details	
Apr 11	Bayloff Stamped Products	Van Buren Township, MI	Fire	Metal Dust	0	0	Dust Collector	No Details	
Apr 25	Continental AG	Newport News, VA	Fire	Unknown	0	0	Dust Collector	No Details	
Apr 13	Hestia Heat Treating	Racine, WI	Fire	Metal Dust	1	0	Ductwork	\$4,000	
Jul 4	West Alabama Mechanical Inc.	Moundville, AB	Explosion	Unknown	0	1	Dust Collector	No Details	
Aug 25	Westermeyer Industries, Inc.	Bluffs, IL	Fire	Metal Dust	0	0	Dust Collector	No Details	

AUTOMOTIVE & METAL WORKING CONTINUED

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	
Sep 24	Wheatland Tube	Wheatland, OH	Fire	Zinc Dust	0	0	Dust Collector	No Details	
Oct 5	Briggs & Stratton	Sherrill, NY	Fire	Metal Dust	0	0	Dust Collector	No Details	
Nov 9	Madison-Kipp Corporation	Madison, WI	Fire	Metal Dust	0	0	Dust Collector	No Details	
Nov 23	Polaris Industries	Madison, AL	Fire	Metal Dust	0	0	Dust Collector	No Details	
Dec 30	Unknown	Coldwater, MI	Fire	Metal Dust	0	0	Dust Collector	No Details	
Aug 3	Reading Alloys	South Heidelberg Township, PA	Explosion	Metal Dust	0	0	No Details	No Details	

INCIDENT SUMMARY - INCIDENTS: 17 | FIRES: 15 | EXPLOSIONS: 2 | INJURIES: 1 | FATALITIES: 1

AGRICULTURE

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	
Jan 12	Cargill-Nutrena	Lecompte, LA	Explosion	Grain Dust	0	0	No Details	No Details	
Jan 21	Rugby Farmers Elevator	Rugby, ND	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Feb 2	Gavilon Grain LLC	Clovis, NM	Explosion	Grain Dust	1	0	Ductwork	No Details	
Feb 4	Columbia Grain Facility	Belgrade, MT	Fire	Grain Dust	0	0	Grain Elevator	No Details	
Jan 7	ADM	Toledo, OH	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Jan 18	Koster Grain	Aurelia, IA	Fire	Wood Dust	0	0	Grain Elevator	No Details	
Jan 19	Cooperative Farmers Elevator	Rock Valley, IA	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Jan 20	Unknown	Fairmont, NE	Fire	Grain Dust	0	0	Grain Bin	No Details	
Feb 4	Risser Grain	East Drumore, PA	Fire	Grain Dust	0	0	Grain Silo	No Details	
Feb 15	Louis Dreyfus	Claypool, IN	Fire	Grain Dust	0	0	Baghouse	No Details	
Mar 17	Tyson Foods Inc.	Pine Bluff, AR	Fire	Grain Dust	0	0	Grain Bin	No Details	
Mar 21	Bunge North America	Red Oak, IA	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Apr 12	Unknown	Wichita, KS	Fire	Grain Dust	0	0	Grain Elevator	No Details	
Apr 30	Perdue Farms	Chesapeake, VA	Fire	Grain Dust	0	0	Soybean Processing Tank	No Details	
May 9	Palouse Grain Growers Inc.	Palouse, WA	Fire	Grain Dust	0	0	Shaker	No Details	
May 12	Farmers Co-op Equity	Sawyer, KS	Explosion	Grain Dust	0	0	Grain Elevator	No Details	
May 23	Unknown	Fort Smith, AR	Explosion	Grain Dust	0	0	Grain Silo	No Details	
May 25	M & E Seed and Grain	Prosser, WA	Explosion	Grain Dust	1	0	Grain Silo	No Details	
May 26	Alcivia	Evansville, WI	Fire	Grain Dust	0	0	Grain Dryer	\$850,000	
June 15	Cooperative Producers, Inc.	Saronville, NE	Fire	Grain Dust	0	0	Grain Bin	No Details	
July 5	Gold Eagle Cooperative	Hardy, IA	Explosion	Sulphur Dust	0	0	Bin	No Details	
Jul 15	Perdue Farms	Washington, IN	Fire	Grain Dust	0	0	Grain Leg	No Details	
Jul 24	Brett Bowes Farm	Antes Fort, PA	Explosion	Grain Dust	0	0	Grain Silo	No Details	

AGRICULTURE CONTINUED

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	
Jul 20	Caledonia Farmers Elevator	Charlotte, MI	Fire	Grain Dust	0	0	Electric Motor	No Details	
Jul 25	Watertown COOP Elevator	Watertown, SD	Fire	Grain Dust	0	0	Bucket Ladder Motor	No Details	
Aug 20	Unknown	Warrington, PA	Fire	Grain Dust	0	0	Grain Silo	No Details	
Sep 7	ADM	Lincoln, NE	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Sep 15	Walk Stock Farm	Neoga, IL	Explosion	Grain Dust	0	0	Grain Bin	No Details	
Sep 19	The Andersons	Delphi, IN	Fire	Grain Dust	0	0	Grain Bin	No Details	
Sep 26	Unknown	High Point, NC	Explosion	Grain Dust	2	0	Grain Silo	No Details	
Oct 2	Unknown	Smithboro, IL	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Oct 13	United Grain Corp.	Vancouver, WA	Fire	Grain Dust	0	0	Conveyor System	No Details	
Oct 17	Cooperative Farmers Elevator	Rock Valley, IA	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Oct 26	New Alliance Bean & Grain Company	Alliance, NE	Fire	Grain Dust	0	0	Conveyor Belt	No Details	
Oct 30	Unknown	Earlville, IL	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Nov 5	Unknown	Nancy, KY	Fire	Grain Dust	0	0	Grain Silo	No Details	
Nov 11	CHS Dakota Plains Ag	Edgeley, ND	Fire	Grain Dust	0	0	Grain Elevator	No Details	
Nov 10	Farmers Rice Milling Company	Lake Charles, LA	Explosion	Grain Dust	0	0	Grain Elevator	No Details	
Dec 2	Star Of The West Milling Company	Kent, OH	Explosion	Grain Dust	0	0	Unknown	No Details	



INCIDENT SUMMARY - INCIDENTS: 39 | FIRES: 28 | EXPLOSIONS: 11 | INJURIES: 4 | FATALITIES: 0

FOOD PROCESSING

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
Apr 29	Spokane Seed Company	Spokane Valley, WA	Fire	Grain Dust	0	0	Grain Silo	No Details	
May 13	Blue Diamond Growers	Sacramento, CA	Fire	Almond Dust	0	0	Dust Collector	No Details	
Aug 9	Grain Craft	Pendleton, OR	Fire	Grain Dust	0	0	Grain Silo	No Details	
Aug 5	J.M. Smucker	New Bethlehem, PA	Fire	Peanut Dust	0	0	Roaster	No Details	
Aug 21	Riceland Foods Inc.	Stuttgart, AR	Fire	Grain Dust	0	0	Dust Collector	No Details	
Oct 3	Milbank Mills Inc.	Chillicothe, MO	Fire	Grain Dust	0	0	Grain Hopper	No Details	
Nov 18	Bunge North America	Jonesville, LA	Fire	Grain Dust	0	0	Grain Elevator	No Details	



INCIDENT SUMMARY - INCIDENTS: 7 | FIRES: 7 | EXPLOSIONS: 0 | INJURIES: 0 | FATALITIES: 0

PULP & PAPER

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
Jan 22	Port Townsend Paper Mill	Port Townsend, WA	Fire	Paper Dust	0	0	Conveyor Belt	No Details	
Jun 14	WestRock	West Point, VA	Fire	Wood Dust	0	0	Conveyor Belt	No Details	






INCIDENT SUMMARY - INCIDENTS: 2 | FIRES: 2 | EXPLOSIONS: 0 | INJURIES: 0 | FATALITIES: 0

SCHOOLS & EDUCATIONAL FACILITIES

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
Mar 1	Waupun Area Junior/Senior High School	Waupun, WI	Fire	Wood Dust	0	0	Dust Collector	No Details	
Mar 22	Maple Mountain High School	Spanish Fork, UT	Fire	Wood Dust	1	0	Dust Collector	\$50,000	












INCIDENT SUMMARY - INCIDENTS: 2 | FIRES: 2 | EXPLOSIONS: 0 | INJURIES: 1 | FATALITIES: 0

ETHANOL PRODUCTION





DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
May 10	Guardian Lima, LLC	Lima, OH	Fire	Grain Dust	0	0	Grain Silo	No Details	
May 11	BioUrja Renewables	Peoria, IL	Explosion	Grain Dust	2	0	Grain Silo	\$2,000,000	
May 20	Three Rivers Energy	Coshocton, OH	Explosion	Grain Dust	0	0	Grain Dryer	No Details	
Aug 14	Homeland Energy Solutions	Lawlor, IA	Explosion	Grain Dust	0	0	Grain Dryer	No Details	
Nov 4	Marquis Energy	Hennepin, IL	Fire	Grain Dust	0	0	Corn Dryer	No Details	

INCIDENT SUMMARY - INCIDENTS: 5 | FIRES: 2 | EXPLOSIONS: 3 | INJURIES: 2 | FATALITIES: 0

OTHER




DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	LINK
Feb 14	VELUX	Greenwood, SC	Fire	Sawdust	0	0	Dust Collector	No Details	
Feb 16	Springfield City Utilities	Springfield, MO	Explosion	Coal Dust	1	0	Boiler	No Details	
Apr 4	California Pellet Mill	Waterloo, IA	Fire	Grain Dust	0	0	Hopper	No Details	
Apr 9	Plastic Engineering Company	Sheboygan, WI	Fire	Plastic Dust	1	0	Dust Collector	\$500,000	
Apr 13	ALTIVIA Petrochemical	Haverhill, OH	Fire	Chemical Dust	0	0	Not Applicable	No Details	
Apr 15	Paragon Medical	Pierceton, IN	Fire	Unknown	0	0	Dust Collector	No Details	
May 11	Unknown	Port Reading, NJ	Fire	Unknown	0	0	Dust Collector	No Details	
May 16	Berry Global	Evansville, IN	Fire	Plastic Dust	0	0	Dust Collector	No Details	
Jun 8	Unknown	Chattanooga, TN	Fire	Unknown	0	0	Dust Collector	No Details	
Jul 21	Johnson Matthey Catalysts	Sevierville, TN	Explosion	Nickel Aluminum Powder		0	Unknown	No Details	
Aug 22	Unknown	Jefferson City, MO	Fire	Unknown	0	0	Dust Collector	No Details	

AGRICULTURE CONTINUED

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT.	EQUIPMENT	DAMAGES	
Aug 26	Zimmer Biomet	Warsaw, IN	Fire	Metal Dust	0	0	Dust Collector	No Details	
Oct 6	Quad/Graphics	Effingham, IL	Fire	Unknown Dust	0	0	Dust Collector	No Details	
Oct 18	Howmet Structure Systems	Niles, OH	Explosion	Titanium Dust	2	0	Dust Collector	No Details	
Dec 8	C6-Zero	Niles, OH	Explosion	Asphalt Dust	9	0	Unknown	No Details	


INCIDENT SUMMARY - INCIDENTS: 15 | FIRES: 11 | EXPLOSIONS: 4 | INJURIES: 13 | FATALITIES: 0

WOOD & WOOD PRODUCTS

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Feb 17	Lois Lumber	Powell River, BC	Fire	Wood Dust	0	0	Unknown	No Details	
Apr 24	Suncoast Lumber & Milling	Sechelt, BC	Fire	Wood Dust	0	0	Conveyor Belt	No Details	
Jun 25	Weyerhaeuser	Kenora, ON	Fire	Wood Dust	0	0	Dust Collector	No Details	




INCIDENT SUMMARY - INCIDENTS: 3 | FIRES: 3 | EXPLOSIONS: 0 | INJURIES: 0 | FATALITIES: 0

AUTOMOTIVE & METAL WORK

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Aug 7	Algoma Steel Inc.	Sault Sainte Marie, ON	Fire	Coal Dust	0	0	Conveyor System	No Details	



INCIDENT SUMMARY - INCIDENTS: 1 | FIRES: 1 | EXPLOSIONS: 0 | INJURIES: 0 | FATALITIES: 0

AGRICULTURE

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Aug 21	Fennel Farms	Newbury, ON	Fire	Grain Dust	0	0	Grain Silo	\$1,500,000	
Nov 29	J.E. Boudreault and Sons	Saint-Irénée, QC	Explosion	Wood Dust	0	0	Heating System	\$75,000	
Dec 23	Bentley Grain Elevator	Bentley, AB	Grain Dust	Grain Dust	0	0	Grain Elevator	No Details	

INCIDENT SUMMARY - INCIDENTS: 3 | FIRES: 3 | EXPLOSIONS: 0 | INJURIES: 0 | FATALITIES: 0

OTHER

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Jan 5	Unknown	Winnipeg, MB	Unknown	Grain Dust	0	0	Dust Collector	No Details	
Dec 9	Jungbunzlauer	Port Colborne, ON	Unknown	Grain Dust	0	0	Dryer	No Details	

INCIDENT SUMMARY - INCIDENTS: 2 | FIRES: 2 | EXPLOSIONS: 0 | INJURIES: 0 | FATALITIES: 0

WOOD & WOOD PRODUCTS

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Feb 13	Energia Madeiras - Industrial e Comercial S.A.	Canoinhas, Brazil	Fire	Sawdust	0	0	Silo	No Details	🔗
Apr 3	West Fraser	Inverness, UK	Explosion	Wood Dust	0	0	Conveyor System	No Details	🔗
Apr 13	Unknown	Guarapuava, Brazil	Fire	Wood Dust	0	0	Unknown	No Details	🔗
May 20	Unknown	Abelardo Luz, Brazil	Fire	Wood Dust	0	0	Silo	No Details	🔗
Jun 7	Unknown	Presidente Getúlio, Brazil	Explosion	Wood Dust	0	0	Baghouse	No Details	🔗
Jun 8	Unknown	São Lourenço do Oeste, Brazil	Fire	Wood Dust	0	0	Silo	No Details	🔗
Jun 22	Unknown	Carvalhais, Portugal	Fire	Wood Dust	0	0	Silo	No Details	🔗
Jul 7	Carpin - Casais Wood & Metal	Braga, Portugal	Fire	Sawdust	0	0	Sawdust Silo	No Details	🔗
Jul 12	Unknown	Papanduva, Brazil	Fire	Wood Dust	0	0	Silo	No Details	🔗
Aug 14	Stylam Industries Ltd.	Panchkula, India	Fire	Wood Dust	0	2	Dust Collector	No Details	🔗
Aug 26	Unknown	Ponte Serrada, Brazil	Fire	Wood Dust	0	0	Wood Shredder	No Details	🔗
Sep 8	Móveis Carraro	Bento Gonçalves, Brazil	Fire	Wood Dust	0	0	Silo	No Details	🔗
Sep 15	Unknown	Arentim, Portugal	Fire	Wood Dust	0	0	Silo	No Details	🔗
Oct 19	Unknown	Vargeão, Brazil	Fire	Wood Dust	0	0	Wood Shavings Silo	No Details	🔗
Oct 18	Unknown	Salinas, Brazil	Fire	Wood Dust	0	0	Warehouse	No Details	🔗
Dec 11	Unknown	Onitsha, Nigeria	Fire	Wood Dust	0	0	Wood Smoothing Machine	No Details	🔗
Oct 27	Akita Plywood Mukaihama Factory	Akita, Japan	Fire	Wood Dust	0	0	Wood Chip Silo	No Details	🔗
Dec 9	No Details	Längenfeld, Austria	Fire	Wood Dust	0	0	Sawdust Silo	No Details	🔗
Dec 15	Unknown	Tijuco Preto, Brazil	Fire	Wood Dust	0	0	Sawdust Silo	No Details	🔗
Dec 17	Unknown	Canela, Brazil	Fire	Wood Dust	0	0	Sawdust Silo	No Details	🔗
Dec 12	Fagnes Pellets SRL	Couvin, Belgium	Explosion	Wood Dust	0	1	Pellet Silo	No Details	🔗
Dec 21	Unknown	Essarts-en-Bocage, France	Fire	Wood Dust	0	0	Dust Collector	No Details	🔗

INCIDENT SUMMARY - INCIDENTS: 22 | FIRES: 19 | EXPLOSIONS: 3 | INJURIES: 0 | FATALITIES: 2

AUTOMOTIVE & METAL WORK

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Aug 3	Unknown	Sehmatal, Germany	Explosion	Aluminum Dust	5	0	Metal Grinder	No Details	🔗
Oct 30	Libyan Iron and Steel Company	Misrata, Libya	Fire	Metal Dust	4	2	Dust Collector	No Details	🔗
Nov 16	Unknown	Fuxing Township, China	Explosion	Metal Dust	3	0	Dust Collector	No Details	🔗
Jul 25	Unknown	Shizuoka City, Japan	Explosion	Aluminum Dust	1	0	Dust Collector	No Details	🔗
Aug 4	Suzuki Motor Corporation	Hamamatsu, Japan	Explosion	Unknown	0	0	Dust Collector	No Details	🔗

INCIDENT SUMMARY - INCIDENTS: 5 | FIRES: 1 | EXPLOSIONS: 4 | INJURIES: 13 | FATALITIES: 2

AGRICULTURE

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	
Jan 19	Ridley	Tamworth, Australia	Fire	Grain Dust	0	0	Conveyor Belt	No Details	
Feb 7	Unknown	Davistow, UK	Fire	Grain Dust	0	0	Grain Silo	No Details	
Jan 13	Unknown	Lucas do Rio Verde, Brazil	Fire	Grain Dust	0	0	Grain Silo	No Details	
Jan 12	Unknown	Caxambu do Sul, Brazil	Fire	Grain Dust	1	0	Grain Dryer	No Details	
Jan 19	Unknown	Campo Erê, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Jan 25	Unknown	São Bento, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Feb 14	Unknown	Great Braxted, UK	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Feb 10	ALZ Grãos	Figueirópolis, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Aug 13	Lar Cooperativa Agroindustrial	Amambai, Brazil	Fire	Grain Dust	0	0	Ductwork	No Details	
Jan 14	Unknown	Lucas do Rio Verde, Brazil	Fire	Grain Dust	0	0	Grain Silo	No Details	
Feb 22	Unknown	Alta Floresta, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Feb 26	Unknown	Juína, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Mar 3	Lar Cooperativa Agroindustrial	Amambai, Brazil	Fire	Grain Dust	0	0	Grain Silo	No Details	
Mar 15	Huinca Cereales	Marcos Juarez, Argentina	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Mar 17	Unknown	Zortéa, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Mar 25	Unknown	Rio Branco, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Mar 26	Unknown	Nova Bassano, Brazil	Fire	Grain Dust	0	0	Grain Silo	No Details	
Mar 30	Unknown	Coxilha, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
May 26	Coccam - Cooperativa Agropecuaria Caamponovense	Lebon Régis, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Apr 7	Cotrijal - Cooperativa Agropecuária e Industrial	Tunas, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Apr 9	Agropecuaria Cara Branca Ltda	Campo Erê, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
May 22	Unknown	Água Doce, Brazil	Fire	Grain Dust	0	0	Grain Silo	No Details	
May 30	Unknown	Ituporanga, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Jun 3	Unknown	Nörvenich, Germany 52388	Fire	Grain Dust	1	0	Grain Silo	No Details	
Jul 8	Cooperativa Triticola Mista Campo Novo	Crissiumal, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Jul 20	Unknown	Alfenas, Brazil	Fire	Grain Dust	0	0	Grain Dryer	\$51,000	
Aug 12	Unknown	Três Corações, Brazil	Explosion	Grain Dust	0	0	Grain Dryer	No Details	
Sep 2	Unknown	Nova Maringá, Brazil	Fire	Grain Dust	0	0	Conveyor System	No Details	
Aug 26	Copérdia	Joaçaba, Brazil	Fire	Grain Dust	0	0	Grain Silo	No Details	
Sep 2	Unknown	Sorriso, Brazil	Fire	Grain Dust	0	1	Tunnel	No Details	
Oct 6	Unknown	Carrington, Australia	Fire	Grain Dust	0	0	Dust Collector	No Details	

AGRICULTURE CONTINUED

Oct 30	Unknown	Água Boa, Brazil	Explosion	Grain Dust	0	0	Grain Dryer	No Details	
Nov 2	JBS Foods	Xanxerê, Brazil	Fire	Grain Dust	2	0	Grain Silo	No Details	
Oct 5	Unknown	Lucas do Rio Verde, Brazil	Explosion	Grain Dust	0	0	Conveyor Belt	No Details	
Oct 13	Cooperativa Agrícola Ganadera de Monte Buey Ltda	Monte Buey, Argentina	Explosion	Grain Dust	2	0	Grain Dryer	No Details	
Jul 18	Unknown	Singapore	Fire	Grain Dust	1	0	Grain Dryer	No Details	
Nov 30	Unknown	Figuerelas, Spain	Fire	Grain Dust	0	0	Corn Silo	No Details	
Nov 17	Unknown	Valliquerville, France	Fire	Flax Dust	0	0	Unknown	No Details	
Dec 2	Unknown	Água Doce, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	

INCIDENT SUMMARY - INCIDENTS: 39 | FIRES: 35 | EXPLOSIONS: 4 | INJURIES: 7 | FATALITIES: 1

FOOD PROCESSING

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Jan 15	Milk-Vita	Baghabari, Bangladesh	Fire	Milk Powder	0	0	Milk Powder Machine	No Details	
Mar 31	Unknown	Lucknow, India	Explosion	Milk Powder	0	0	Milk Dryer	No Details	
Apr 1	Unknown	Boa Vista das Missões, Rio Grande do Sul Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Apr 4	Cereais Estrela	Salto do Jacuí, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Mar 22	Unknown	Mafra, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Apr 29	Unknown	Ermo, Brazil	Fire	Grain Dust	0	0	Grain Dryer	No Details	
Jun 7	Unknown	Caputira, Brazil	Fire	Grain Dust	0	0	Bean Dryer	No Details	
Jul 5	Toro	Indre Arna, Norway	Explosion	Unknown	0	0		No Details	
Aug 19	Unknown	Kakinada, India	Explosion	Sugar Dust	9	2	Conveyor Belt	No Details	
Sep4	GrainCorp.	Carrington, Australia	Fire	Grain Dust	0	0	Dust Collector	No Details	
Sep 23	Rampinelli Alimentos	Eldorado do Sul, Brazil	Fire	Grain Dust	0	1	Grain Silo	No Details	
Dec 11	No Details	Turvo, Brazil	Fire	Rice Dust	0	0	Rice Dryer	No Details	
Dec 22	Unknown	Chivilcoy, Argentina	Fire	Grain Dust	0	0	Grain Silo	No Details	








INCIDENT SUMMARY - INCIDENTS: 13 | FIRES: 10 | EXPLOSIONS: 3 | INJURIES: 9 | FATALITIES: 2

PULP & PAPER

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Jul 1	Mercer Stendal	Arneburg, Germany	Fire	Wood Dust	0	0	Conveyor System	No Details	
Dec 8	Munksjö Rottersac SAS	Lalinde, France	Fire	Paper Pulp	1	0	Paper Machine	No Details	












INCIDENT SUMMARY - INCIDENTS: 2 | FIRES: 2 | EXPLOSIONS: 0 | INJURIES: 1 | FATALITIES: 0

POWER GENERATION & COAL HANDLING

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Feb 10	Coquesul Brasileiro Indústria e Comércio Ltda	Criciúma, Brazil	Fire	Coal Dust	0	0	Unknown	No Details	
Mar 2	Engro Powergen Thar Limited	Thar, Pakistan	Explosion	Coal Dust	5	0	Unknown	No Details	
May 9	AVR UmweltService GmbH	Sinsheim, Germany	Explosion	Unknown	0	0	Conveyor Belt	No Details	
Jun 18	No Details	Coseley, UK	Fire	Coal Dust	0	0	Unknown	No Details	
Oct 14	Turkish Hard Coal Enterprises	Amasya, Turkey	Explosion	Coal Dust	11	41	Sawdust Silo	No Details	
Sep 22	JSW	Dąbrowa Górnicza, Poland	Explosion	Coal Dust	6	0	Unknown	No Details	
Nov 29	Taichung Power Plant	Taichung City, Taiwan	Fire	Coal Dust	0	0	Unknown	No Details	

INCIDENT SUMMARY - INCIDENTS: 7 | FIRES: 3 | EXPLOSIONS: 4 | INJURIES: 22 | FATALITIES: 41

OTHER

DATE	COMPANY	LOCATION	TYPE	FUEL	INJ.	FAT	EQUIPMENT	DAMAGES	LINK
Feb 7	Northport	Marsden Point, New Zealand	Fire	Wood Dust	0	0	Conveyor System	No Details	
Apr 21	Unknown	Menden, Germany	Explosion	Lignite Dust	5	0	Silo	No Details	
Jul 20	Unknown	Río Tercero, Argentina	Explosion	Grain Dust	0	0	Conveyor System	No Details	
Aug 26	Porto de São Francisco do Sul	São Francisco do Sul, Brazil	Fire	Grain Dust	0	0	Conveyor Belt	No Details	
Sep 10	VLI Logística	Cubatão, Brazil	Fire	Sulfur Dust	0	0	Conveyor System	No Details	
Oct 25	XPS Foam	Rhydymwyn, UK	Explosion	Foam Rubber Dust	1	0	Granulator	No Details	
Nov 7	Daicel Corporation	Otake City, Japan	Fire	Coal Dust	0	0	Conveyor Belt	No Details	
Dec 1	Unknown	Gehren, Germany	Explosion	Cellulose Dust	1	0	Dust Collector	No Details	
Nov 23	No Details	Mühlberg, Germany	Explosion	Coal Dust	0	0	Chimney	No Details	
Nov 21	Syded du Lot	Cactus, France	Fire	Wood Dust	0	0	Wood Silo	No Details	
Dec 29	Unknown	Kameyama City, Japan	Explosion	Aluminum Dust	6	0	Unknown	No Details	

INCIDENT SUMMARY - INCIDENTS: 11 | FIRES: 5 | EXPLOSIONS: 6 | INJURIES: 13 | FATALITIES: 0



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