



FIREWORKS EVENT APPLICATION

CITY OF TOMBALL, TEXAS | 1200 Rudel Dr | Tomball, Texas 77375 | (281) 351-7101

An application to stage an event within the City of Tomball shall be filed with the Tomball Fire Department at least 90 days prior to the event. This application is not to be construed as authorizing or agreeing to any event until formally approved by Tomball City Council and permitted by the Tomball Fire Department.

Date: 06/23/2026

Request for permission to conduct and Fireworks Show for the following type of event (please check one):

Festival Community Event Wedding Music Event Other (specify) _____

1. Event title: Tamed Kessler Wedding at Boxwood Manor
2. Contact: Michael & Modiri Phone: 701-580-3061
3. Contact address: 21927 Latoosa Dr Spring, TX 77388
4. Contact email: mikemodiri2011@gmail.com
5. Event date: 07/11/2026
6. Firework Show Event times: Start 7:45 PM Finish 11:03 PM Set-up 30 min. Breakdown 30 min.
7. Fireworks Show Type (Check All that Apply): Aerial Ground Effects Flame Effects
8. State-Licensed Fireworks Provider: Zachary Spruill Phone: 713-202-8532
9. On-site contact: Zachary Spruill Mobile Phone: 713-202-8532
10. Estimated number of attendees: 200
11. Detailed site map is attached: Yes No
12. Is this event open to the public: Yes No
13. Admission fee: \$ _____ Free

Signature: [Handwritten Signature]



SPECIAL EVENT APPLICATION

CITY OF TOMBALL, TEXAS | 401 Market Street | Tomball, TX 77375 | (281) 351-5484

An application to stage an event within the city of Tomball shall be filed with the Marketing & Tourism Team at least 180 days prior to the event. This application is not to be construed as authorizing or agreeing to any event until formally approved by the Tomball City Council.

Date: 06/23/2026 Is this event Co-City sponsored? Yes No

Request for permission to use a public venue for the following type of event (please check one):

Festival Community Event Arts & Crafts Event Music Event Other (specify) Wedding

1. Event title: Jared Kessler Wedding at Boxwood Manor

2. Sponsoring entity: Boxwood Manor

3. Is this organization based in Tomball: Yes No

4. Is this organization non-profit or for-profit *Attach 501 (c) (3) tax exemption if applicable

5. Contact: Avery Young Phone: 832-914-0222

6. Contact address: 945 E Hutsmith Rd. Tomball, TX 77375

7. Contact email: info@boxwoodmanorevents.com

8. Event date: 07/11/2026

9. Event times: Start 7:45pm Finish 11:00pm Set-up 30 mins Breakdown 30 mins

10. Is this event for charity? Yes No

11. If yes, what charity? _____ Tax ID _____

12. If yes, what percentage of net proceeds will be donated to the charity? _____

13. On-site contact: Zachary Spruill Mobile #: 713-202-8532

14. Estimated number of attendees: 200

15. Detailed site map in attached: Yes No

16. Is this event open to the public: Yes No

17. Admission fee: \$ _____ Free

18. Time at which event staff will begin to arrive: 3pm

19. The applicant will defend and hold harmless the city of Tomball from all claims, demands, actions or causes of action, of whatsoever nature or character, arising out of or by reason of the conduct of the activity authorized by such application including attorney fees and expenses. Initial MM

20. The applicant will provide proof of general liability insurance for the event naming the City of Tomball as additional insured. Initial MM

21. Name of insurance carrier: Admiral Insurance Company

22. Are Fireworks included in your event? No Yes (Must submit Fireworks Event Application)

Flame Effects

Signature: [Signature]

FOR OFFICIAL USE - Fee required: Yes _____ No _____ Amount Due: \$ _____



Business Name: EC Entertainment TX LLC
 Business Address: 6710 Spring Stuebner Rd Ste 709 # 1021 Spring, TX 77389
 Contact Name: Michael Deza Medici Phone: 701-580-3061
 Email: mikemodvita@mikemodici2011@gmail.com Date: 06/23/2026

Annual Operational Permits

The following permits are issued for the operations set forth in Sections 105.5.1 through 105.5.52 of the 2021 International Fire Code.

X	Type of Permit	Amount	Reason for Permit
	105.5.1 Additive Manufacturing	\$100	To conduct additive manufacturing operations regulated by Section 320.3
	105.5.2 Aerosol products	\$100	To manufacture/store/handle aerosol products in excess of 500 lbs.
	105.5.3 Amusement buildings.	\$100	To operate a special amusement buildings
	105.5.4 Aviation Facilities	\$150	To use a Group H or S occupancy for aircraft servicing/repair/fuel-servicing vehicles
	105.5.6 Cellulose Nitrate Film	\$100	To store, handle or use cellulose nitrate film in a Group A occupancy
	105.5.7 Combustible dust producing operations	\$100	For any operations producing combustible dusts as defined in Chapter 2
	105.5.8 Combustible fibers	\$125	For the storage/handling of combustible fibers greater than 100 ft ³
	105.5.9 Compressed gases	\$100	For the storage/use/handling of compressed gases at NTP
	105.5.10 Covered and open mall buildings	\$50	To place/use combustible goods, liquid/gas-fired/open/flame producing equip
	105.5.11 Cryogenic fluids	\$100	To produce/store/transport/use/handle/dispense cryogenic fluids
	105.5.12 Cutting and welding	\$75	To conduct cutting or welding operations within the jurisdiction
	105.5.13 Dry cleaning	\$100	For dry cleaning business/upgrade cleaning solvent used in dry cleaning business
	105.5.14 Energy storage systems	\$150	For stationary/mobile energy storage systems regulated by Section 1207
	105.5.18 Flammable and combustible liquids	\$100	To use/operate/store/handle/manufacture/process/blend/dispense these liquids
	105.5.19 Floor finishing	\$100	For floor finishing/surfacing operations exceeding 350 ft ² (Class I or II liquids)
	105.5.20 Fruit and crop ripening	\$100	To operate/conduct fruit/crop-ripening facility/process using ethylene gas
	105.5.22 Hazardous materials	\$150	To store/transport/dispense/use/handle hazardous materials
	105.5.23 HPM facilities	\$150	To store/handle/use hazardous production materials
	105.5.24 High-piled storage	\$100	To use building/portion of for 500 ft ² plus of high-piled combustible storage
	105.5.25 Hot work operations	\$75	To conduct hot work operations
	105.5.26 Industrial ovens	\$100	For the operation of industrial ovens
	105.5.27 Lumber yards and woodworking plants	\$100	For the storage/processing of lumber exceeding 100,000 board feet
	105.5.28 Liquid/gas fueled vehicles/equipment in Assemblies	\$100	To display/operate/demonstrate liquid/gas-fueled vehicles/equip in assemblies
	105.5.29 LP gas	\$100	For storage/use of LP-gas Operation of cargo tankers that transport LP-gas
	105.5.30 Magnesium	\$150	To melt/cast/heat treat/grind more than 10 tankers of magnesium
	105.5.31 Miscellaneous combustible storage	\$100	To store in excess of 2,500 ft ³ gross volume of combustible material
	105.5.32a Mobile food Preparation Vehicle- Verification	\$50	To verify a mobile food preparation vehicle is compliant
	105.5.32b Mobile food Preparation Vehicles	\$200	To operate mobile food preparation vehicles
	105.5.33 Motor fuel dispensing facilities	\$125	For the operation of automotive, marine and fleet motor fuel-dispensing facilities
	105.5.36 Open flames and candles	\$50	To use open flames/candles in assembly areas/dining areas/drinking establishments
	105.5.37 Organic coatings	\$100	For any organic-coating manufacturing operation producing more than 1 gal/day
	105.5.39a Places of assembly (50-100)	\$75	To operate a place of assembly with 50-100 people
	105.5.39b Places of assembly (101-299)	\$100	To operate a place of assembly with 101-299 people
	105.5.39c Places of assembly (300 or more)	\$125	To operate a place of assembly with 300 or more people
	105.5.40 Plant Extraction Systems	\$75	To use plant extraction systems
	105.5.43 Pyroxylin plastics	\$100	For storage/handling/assembly/manufacture of/or involving pyroxylin plastics
	105.5.44 Refrigeration equipment	\$150	To operate a mechanical refrigeration unit or system regulated by Chapter 6
	105.5.45 Repair garages and motor fuel-dispensing facilities	\$125	For operation of repair garages
	105.5.46 Rooftop Heliports	\$125	For the operation of a rooftop heliport
	105.5.47 Spraying or dipping	\$150	To conduct spraying/dipping operation/the application of combustible powders
	105.5.48 Storage of scrap tires and tire byproducts	\$125	To establish/conduct/maintain storage of scrap tires and tire byproducts +2,500 ft ³
	105.5.50 Tire Rebuilding Plants	\$150	For the operation and maintenance of a tire-rebuilding plant
	105.5.51 Waste handling	\$100	For the operation of wrecking yards/junk yards/waste material-handling facilities
	105.5.52 Wood products	\$100	To store chips/hogged material/lumber/plywood in excess of 200 ft ³

I understand that the permit I have applied for may be revoked at any time for violation of the terms and conditions under which it is granted, or for any violation of the City of Tomball Fire Codes and Ordinances pertaining thereto. I also understand that this permit must be posted at the location indicated as the permitted premises.

Applicant Signature:

Permit Total: \$ _____

Single Use Operational Permits

X	Type of Permit	Amount	Reason for Permit
	105.5.5 Carnivals and fairs.	\$175	To conduct a carnival or fair
	105.5.15 Exhibits and trade shows	\$75	To operate exhibits and trade shows
	105.5.16 Explosives	\$150	For the manufacture/storage/handling/sale/use of any explosive materials
	105.5.17 Fire hydrants and valves	\$100	To use/operate hydrants/valves with ready access from a fire access road
	105.5.21 Fumigation and insecticidal fogging	\$75	For fumigation/insecticide fogging or a space using a toxic/flammable fumigant
	105.5.34 Open burning	\$200	For kindling/maintaining an open fire on any public or private ground
	105.5.35 Open Flames and Torches	\$50	To remove paint with a torch/use a torch/open-flame device in a wildfire risk area
	105.5.38 Outdoor assembly event	\$150	To conduct outdoor assembly event with planned attendance of 1,000 persons
	105.5.41 Private fire hydrants	\$100	For the removal from service, use or operation of private fire hydrants
X	105.5.42 Pyrotechnic special effects material	\$150	For use and handling of pyrotechnic special effects material
	105.5.49 Temporary membrane structures and tents	\$100	To operate an air-supported/special event/tent exceeding 400 ft ²
	Fire Flow Test	\$150	To flow water from fire hydrant for flow calculations

Construction Permits

The following permits are issued for the operations set forth in Sections 105.6.1 through 105.6.24 of the 2021 International Fire Code.
If your project requires a plan submittal, the standard plan review fee of \$200.00 will be required.

105.6.1 Automatic Fire-Extinguishing Systems	\$150	For installation of/modification to an automatic fire-extinguishing system
105.6.2 Compressed Gases	\$150	To install/repair/abandon/remove/place OOS/close/modify compressed gas system
105.6.3 Cryogenic Fluids	\$150	For installation of/alteration to outdoor stationary cryogenic fluid storage systems
105.6.4 Emergency Responder Communication Coverage System	\$100	For installation/modification to in building, ERCCS & related equipment
105.6.5 Energy Storage Systems	\$150	To install energy storage systems regulated by Section 1207
105.6.6 Fire Alarm/Detection Systems & Related Equipment	\$100	For installation/modification to fire alarm & detection systems & related equipment
105.6.7 Fire Pumps & Related Equipment	\$150	For installation/modification to fire pumps & related equipment
105.6.8 Flammable & Combustible Liquids	\$150	To install/repair/modify items where flam/comb liquids are transported/stored/used
105.6.9 Fuel Cell Power Systems	\$150	To install stationary fuel cell power systems
105.6.10 Gas Detection Systems	\$150	For the installation of or modification to gas detection systems
105.6.11 Gates/Barricades Across Fire Access Roads	\$100	For installation/modification to a gate/barricade across a fire apparatus access road
105.6.12 Hazardous Materials	\$150	To install/repair/abandon/remove/place OOS/close/modify a storage facility
105.6.13 High-Piled Combustible Storage	\$150	For the installation/modification to a structure (>500 ft ²) of high-piled storage
105.6.14 Industrial Ovens	\$150	For installation of industrial ovens regulated by Chapter 30
105.6.15 LP-Gas	\$150	For installation of or modification to an LP-gas system
105.6.16 Motor Vehicle Repair Rooms & Booths	\$150	To install or modify a motor vehicle repair room or booth
105.6.17 Plant Extraction Systems	\$75	For installation of or modification to plant extraction systems
105.6.18 Private Fire Hydrants	\$75	For the installation or modification of private fire hydrants
105.6.19 Smoke Control/Smoke Exhaust Systems	\$100	For installation of or alteration to smoke control or smoke exhaust systems
105.6.20 Solar Photovoltaic Power Systems	\$200	To install or modify solar photovoltaic power systems
105.6.21 Special Event Structure	\$100	To erect and take down a temporary special event structure
105.6.22 Spraying or Dipping	\$150	To install or modify a spray room, dip tank or booth
105.6.23 Standpipe Systems	\$150	For the installation/modification/removal from service of a standpipe system
105.6.24 Temporary Membrane Structures & Tents	\$100	To erect air-supported temp membrane structure/temp stage canopy/tent of >400 ft ²

Credit Card Draft Authorization Form

NOTE: There is an additional fee of 4% of the total permit that will be added to all Credit Card Transactions.

Project Name On Permit:
 Project Physical Address:
 Project Contractor Name:

Jared Kessler Welding at Boxwood Manor
945 E Hutsmith Rd. Tomball, TX 77375
EC Entertainment / Michael R Medina

Credit Card Information

Visa, Master or American Express Card ONLY

Credit Card Number: _____
 Name on Card: _____
 Billing Address: _____
 City: _____ State: _____
 Cell Phone: _____ Business Phone: _____
 Card Holder's Email: _____

Expiration Date: _____
 CVV Code: _____
 Apt/Suite No. _____
 Zip: _____

I authorize The City of Tomball to charge the account referenced above for the amount of \$_____, plus a 4% credit card transaction fee. I understand that my credit card information will only be used for the purpose of a one-time Permit payment to the City of Tomball and that the City will keep my credit card information confidential.

 Card Holder's Signature

 Date



FLAME EFFECTS

APPLICATION PACKET

ec-ent.com

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10	FLAME EFFECT INFO & SAFETY
22	MATERIAL SAFETY DATA SHEET

DISPLAY INFORMATION

APPLICANT:

EC ENTERTAINMENT

6710 Spring Stubner Rd. Ste709-#1021. SPRING, TX 77389

CONTACT:

CHRIS SCHUMACHER|OWNER | 713-498-7271 | INFO@EC-ENT.COM

MICHAEL R MODIRI | 701-580-3061 | MIKEMODIRI2011@GMAIL.COM

EVENT:

WEDDING AT BOXWOOD MANOR

945 E HUFSMITH RD, TOMBALL, TX 77375

DISPLAY DATE: 07/11/26

ESTIMATED DISPLAY TIMES: 7:45PM & 11:00PM

TECHNICIANS:

ZACHSPRUILL -FLAMEEFFECTSOPERATOR

713-202-8532 | ZACH@ZACHSPRUILL.COM

EFFECT INFORMATION

QTY

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DESCRIPTION

JMAZ FIRESTORM F3
COLD SPARK MACHINES



**JMAZ FIRESTORM F3 MANUAL ON PAGE 10
MSDS FOUND ON PAGE 22**

PAGE 4

Boxwood Manor

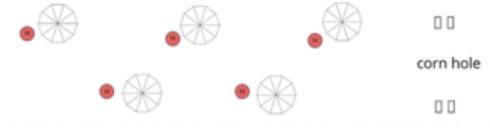
07/11/2026. Event times @ 7:45pm & 11pm

4 F.E. Machines event @ 11pm with 15' safety zone

Yellow highlighted areas designate safety zones



- Revere Social patchwork moss w/ white poplin
- Revere social seashell w/ white poplin napkin
- light pink w/ sage green napkin
- light blue poplin w/ sage green napkin

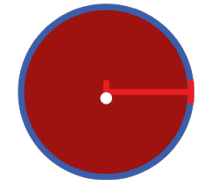


ON-SITE OPERATION

ColdSparks will go off for 30 seconds 2 separate times in 30 second intervals. Total of 1 minute of runtime during a 3 minute period. During grand entrance and exit.

- a) Grand Entrance: 7:45pm, a 10' distance from effect to combustibles & audience will be maintained
- b) Grand Exit: 11pm, a 15' distance from effect to combustibles & audience.

Audience, including Bride & Groom will remain outside of fallout zone during display. Effects placed on the floor facing upwards.



Cold Spark (effect) centered around safety distance.

QUALIFICATIONS & INSURANCE

**LICENSES OF THE OPERATOR
AND
COMPANY CERTIFICATE OF INSURANCE**

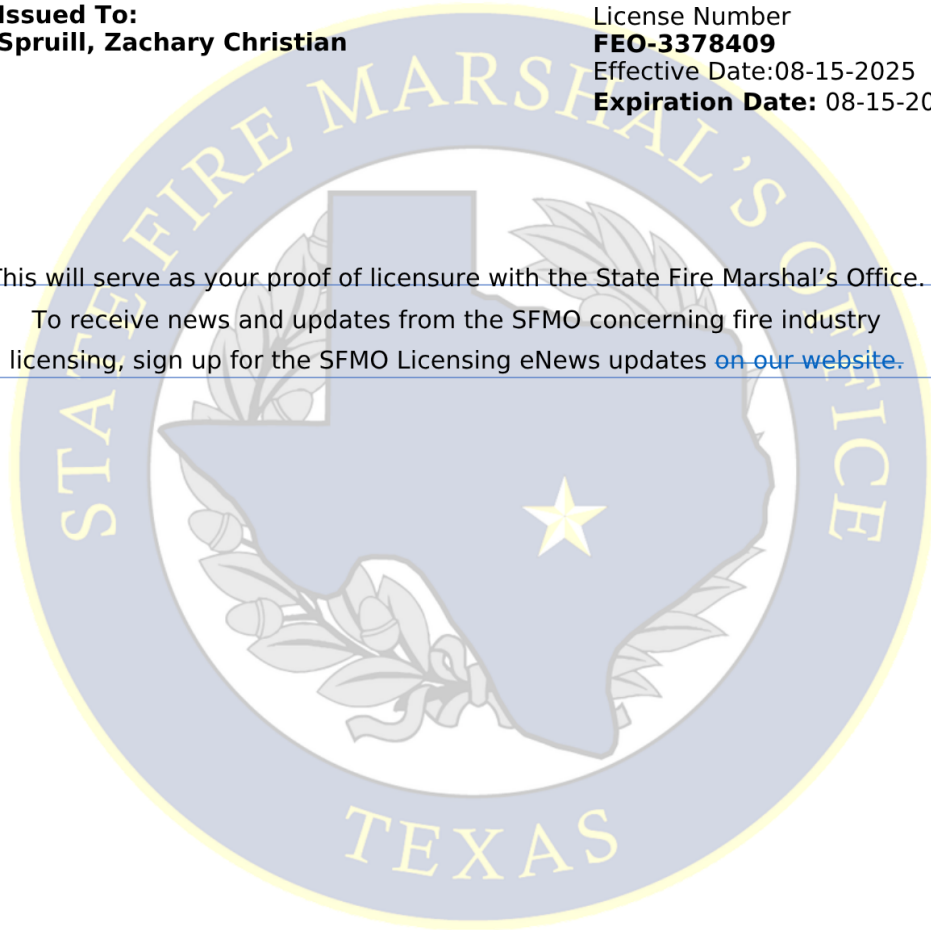
**FIREWORKS FLAME EFFECTS OPERATOR'S LICENSE
TEXAS DEPARTMENT OF INSURANCE
STATE FIREMARSHAL'S OFFICE**

**Issued To:
Spruill, Zachary Christian**

License Number
FEO-3378409
Effective Date:08-15-2025
Expiration Date: 08-15-2026

This will serve as your proof of licensure with the State Fire Marshal's Office.

To receive news and updates from the SFMO concerning fire industry licensing, sign up for the SFMO Licensing eNews updates [on our website.](#)





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
06/22/2026

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Bowley Insurance Agency 100 Interstate 45 N, #122 Conroe, TX 77301 License#	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL: ADDRESS:													
	<table border="1"> <tr> <th>INSURER(S) AFFORDING COVERAGE</th> <th>NAIC #</th> </tr> <tr> <td>INSURER A : Admiral Insurance Company</td> <td></td> </tr> <tr> <td>INSURER B :</td> <td></td> </tr> <tr> <td>INSURER C :</td> <td></td> </tr> <tr> <td>INSURER D :</td> <td></td> </tr> <tr> <td>INSURER E :</td> <td></td> </tr> <tr> <td>INSURER F :</td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	INSURER A : Admiral Insurance Company		INSURER B :		INSURER C :		INSURER D :		INSURER E :		INSURER F :
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INSURER A : Admiral Insurance Company														
INSURER B :														
INSURER C :														
INSURER D :														
INSURER E :														
INSURER F :														
INSURED EC Entertainment TX, LLC 6710 Spring Steubner Rd Ste 709-#1021 Spring, TX 77389														

COVERAGES **CERTIFICATE NUMBER:** 20260113-08 **REVISION NUMBER:**


THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
<input checked="" type="checkbox"/>	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:		CA000003209-36-1217	06/04/2026	06/04/2027	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000 \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY <input type="checkbox"/> OTHER:					COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input type="checkbox"/> RETENTION \$					EACH OCCURRENCE \$ AGGREGATE \$ \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y / N N / A				PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Wedding with cold sparks/flame effects/pyrotechnics, Boxwood Manor. The general liability insurance policy required by this section shall be conditioned to pay the amount of money the insured becomes obligated to pay as damages because of bodily injury and property damage caused by an occurrence involving the insured or insured's servant, officer, agent, or employee in the conduct of display of pyrotechnics and flame effects.

CERTIFICATE HOLDER **CANCELLATION**

Date: 7/11/26 Boxwood Manor 945 E Hufsmith Rd Tomball, TX 77375 City of Tomball, TX	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE  © 1988-2015 ACORD CORPORATION. All rights reserved.
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FIRESTORM F3

Professional-grade cold-spark machine

No-Flame, No Smoke and No bad smell

Environmentally friendly!

Indoor & Outdoor safe!



PRODUCT MANUAL



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NOTE: PLEASE READ THE ENTIRE PRODUCT MANUAL BEFORE USE!

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NOTICE

JMAZ lighting solely distributes its products through authorized dealers in order to ensure its customers receive proper services and information from the dealers. JMAZ lighting reserves the right to only offer technical support or warranty services for products purchased through authorized JMAZ lighting dealers. Please refer to our website www.jmazlighting.com for a list of authorized dealers.

For product updates, documentation, software and support please visit JMAZ LIGHTING you can find the latest version of this user manual in the product's download section.

PRODUCT OVERVIEW

The Firestorm F3 is a cold spark machine designed for entertainment purposes only. With an adjustable spark height of 3-12 feet (1-3meters) it will bring your performances to a whole new level. When used properly, you will have the firework-like spark accent everyone is looking for in a safe and controlled way. Stand anywhere in the room, with a single push of a button the included RF remote control allows operation (ON/OFF) of the FIRESTORM F3 without having to point directly at the machine or you can include it into your light show by using the wired DMX port. JMAZ certified cold-spark powder is required, as many other manufacturers decide to blend other alien-non-oem chemicals which can cause the machine to clog or perform poorly. Each package of JAMZ cold-spark refill contains 400g of pure non-tampered or chemically altered powder. Each 200g of powder will give you +/- 15 minutes depending on spark height. A 400g pack is included when you buy 2 of the FIRESTORM F3 as well as a protective, rolling, stealth, road-case. The road-case can house either 2 or 4 FIRESTORM F3 machines, which make the FIRESTORM F3 the perfect choice for onstage performances, mobile DJ's/Bands, bars or nightclubs!

Product features

- Fireworks-like spark effect.
 - Spark output height adjustable between 3 & 12 feet (1-3 meters). *
 - Easy to use and operate via RF remote control or DMX. **
 - Environmentally friendly.
 - 4-button easy to use Control panel with LCD display. ***
 - Self-cleaning function (see REMOTE CONTROL FUNCTIONS, for details).
 - Rugged metal housing.
 - 4 pack Road case available as added accessory.
 - Power-Con plug input and pass through out. ****
 - SCAN card to reset the timer. *****
 - Refills available in 200g packs.
 - +/- 7.5 minutes of use per 100g.
 - 150g fill capacity.
 - Able to operate an inclination angle of maximum 45 degrees.
- * Recommended **indoor** spark height 1-7 Feet, Recommended **outdoor** spark height 7-12 feet.
- ** You can control more than one machine with the same RF remote controller; simply connect the included wireless - remote-receiver into the port of all the FIRESTORM F3 machines in use.
- *** The LCD display also shows how many seconds of use remain, before the next refill.
- **** Power-Con in and out can be used to link multiple FIRESTORM F3 machines to the same power outlet. **NOTE: Do NOT connect more than 3 machines to any one 15Amp outlet.**
- ***** Make sure to use the scan card every time you refill, this will reset the timer and give you another 1200 seconds of use for every 200g of powder.

SAFETY STEPS TO TAKE PRIOR TO USE (EVERY TIME)

NOTE: The life of the FIRESTORM F3 and the efficiency of its performance depend on YOU, by following the safety steps mentioned below, you are prolonging its life and increasing the performance. Failure to follow the precautions listed below may result in loss of manufacturer's warranty, poor performance and or a short life span.

- ξ Before every use, and with the power cord disconnected please inspect the machine for any physical damages, imperfections or abnormalities.
- ξ always use proper eye protection and gloves when handling the FIRESTORM F3.
- ξ Make sure you learn the difference between the loading/fill (input chamber) and the SPARK-EXIT chamber. The loading chamber requires you to unscrew the cap, hand tighten after loading and **under no circumstances, put the powder into the exit chamber.**
- ξ After connecting power into the FIRESTORM F3 turn the switch ON, the FIRESTORM F3 will start the heating process and after only a couple of minutes be ready for use.
- ξ Give the FIRESTORM F3 a clearance area of at least 5-15 feet. Please keep away from any flammable materials, any cloth, furniture, boxes, mattresses, pillows or any items that can keep the FIRESTORM F3 from operating in ventilated manner. Be sure to clean up the area around the FIRESTORM F3 after every use as small layer of dust from the cold-spark-powder can form around the perimeter.
- ξ When the FIRESTORM F3 emits the cold spark, it is normal for some if any amount of smoke to be notice; this should only last a few short seconds.
- ξ Never run the machine on an empty tank or allow it to run empty during use as damage to the machine may occur. Empty unused powder from the tank by flipping the machine upside down until no more powder comes out.
- ξ Unused cold-spark-powder should be stored in an air-tight compartment; preferably, it is best to use it in its entirety. It may become harden and oxidation could develop if it's exposed to air for an extended period of time. **Never leave unused powder inside the machine, always empty the tank and run a clean cycle (see remote control functions on how to run a clean cycle). Failure to empty the bin and running a clean cycle will damage the FIRESTORM F3.**
- ξ Make sure the machine is turned off, cool and disconnected from a power source before and during every refill.
- ξ Always use JMAZ lighting certified cold-spark-powder, it is the most pure, non-chemically enhanced or altered powder in the market. It will make your machine run more efficient.
- ξ The sparks emitted from the FIRESTORM F3 are cold-sparks and non-flammable, however, it is recommended to keep your hands away from the machine as well as the spark stream. The machine housing can get hot during operation as well as during the heating process. **Make sure the machine is cleaned, not operating, has not powder inside, is turned off and has cooled down before stowing it for transportation. Failure to do so will result in a damaged machine.**
- ξ **The FIRESTORM F3** has to be in an upright position in order to operate, it will error-out and stop working if it is tilted in any way.
- ξ The FIRESTORM F3 is NOT water proof or resistant please keep anything wet, moisture environment or water away at all times.
- ξ When cleaning the FIRESTORM F3 make sure it is not connected to a power source, wipe off the surface parts with a soft-lint-free and dry cloth, never use solvents or detergents. Do not use anything above 135psi to air-blow-clean the internal components.
- ξ Keep out of the reach of children and pets, throw away all packaging material immediately after unboxing and never leave the FIRESTORM unattended while running.
- ξ Do NOT remove any of the serial numbers or warning labels, do NOT open or remove any screws from the FIRESTORM F3.

Warning – risk of fire and injuries

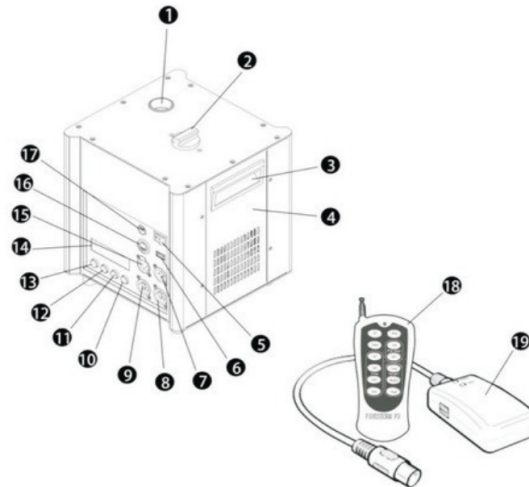
CAUTION!



Cold Spark Powder handling

The powder is highly flammable and can spontaneously combust when exposed to air or moisture and thereby cause fires and/or explosions. Keep away from heat, hot surfaces, sparks, open fires and other ignition sources. Do not smoke, keep away from moisture, and avoid dust formation. Always work in a well ventilated area, wear protective clothing, gloves and glasses when handling cold-spark-powder. In the case of fire, the material reaches very high temperatures and therefore requires specific extinguishing measures. Metal fire powder (fire class D) and dry sand are suitable extinguishing agents.

PROFILE BUTTONS & CONNECTIONS



- 1) Spark Exit chamber (NEVER! Load powder in here)
- 2) Loading/Fill chamber (LOAD powder here)
- 3) Side handles (located on Left & Right sides)
- 4) Cover, removable for easy access to clean internally
- 5) Switch to turn ON/OFF FIRESTORM F3
- 6) USB, for factory use ONLY.
- 7) Power-Con output, feeds pass-through power
- 8) DMX input, DMX-512 programming
- 9) DMX output, Pass-through to other DMX-512 devices
- 10) Button--ENTER
- 11) Button--DOWN
- 12) Button--UP
- 13) Button--Menu
- 14) Control panel LCD display, for easy viewing of menu options
- 15) Power-Con input, direct from source or other Power-Con pass-through
- 16) Wireless receiver input;
- 17) 8 Amp AGU type Fuse
- 18) Wireless remote controller
- 19) Wireless receiver; use this on every FIRESTORM F3 you wish to use. One remote control works for all of them at the same time.

CAUTION!



Operating conditions

Please read the **“Safety Steps to take”** section before using the machine.
Keep an appropriate safety distance from people, animals or any flammable material.
Always ensure sufficient ventilation and have fire-extinguishing appliances ready at all times. Wear protective clothing, gloves and glasses when necessary.
Keep device upright. The integrated “Tip Over” function automatically stops spark output whenever the maximum inclination angle of 45° is exceeded.
Allow the machine to cool down and empty the powder container before stowing or preparing for transportation. Keep the powder away from moisture and ignition sources. Avoid dust formation around the machine. Clean the machine and the working area after each use or at least once a day.

SETUP

Setup and loading cold-spark-powder before use:

- Completely un-box the FIRESTORM F3, throw away and dispose all packing material before proceeding as this may be a choking hazard. Pay specific attention to the spark-exit-chamber and make sure there are no packing remnants inside the exit chamber.
- Place the machine on a dry and flat surface, with a clear well ventilated perimeter of at least 5-10feet. Unscrew the loading/fill cap to expose the powder recipient inside the machine. A maximum of 150g of powder will fill the machine. **Screw the cap on and hand tighten to make sure no powder comes out.**

Note: no scan card is required for the first use; the FIRESTORM comes preloaded with 1200 seconds of use. A scan card will be required after the initial 1200 seconds run out.

Scan card:

The Scan card is included with the purchase of cold-spark-powder refill, simply swipe the card to reset the 1200 seconds counter. The cards are not reusable; therefore you may only use them once.

Main connections

Connect the included (blue) Power-con cable between the 110V AC power outlet and the power input of the FIRESTORM F3. You may use the POWER OUT to daisy-chain power to other devices. **Note; make sure you stay with-in the rating-limitations of the main power source.**

Power ON

Turn power ON by putting the ON/OFF switch in the ON position. The machine will show “Standing by” and begin the warming up process which only takes few short minutes. During the warm up process, the machine will not emit sparks, once the warm-up process is completed, the LCD display will read “READY”.

WIRELESS REMOTE CONTROL FUNCTIONS

- 1 Disconnect the DMX cable from the machine.
- 2 Connect the (supplied) wireless receiver to the CONTROLLER plug of the FIRESTORM F3. Note: the wireless-receiver bottom is magnetic and can be placed on the body of the FIRESTORM F3. Make sure RED LED is glowing RED before using the wireless control.
- 3 The remote controller LED has 2 colors, RED and GREEN. The LED glows RED when the FIRESTORM is powered ON and GREEN when the FIRESTORM is ready for use.
- 4 The remote control has different ways to turn ON the spark output, you can use any of the 5S, 10S, 20S, 30S, Low, Middle and High. *see the chart below for details.*
- 5 Refer to the following table. Use button 2 to stop spark output. During the output the display indicates "Volume Out" followed by the value set for the output volume.



Button	Function
Power	Links the remote control to the wireless receiver
Stop	STOP spark effect, regardless of what button used to turn start.
Clean	Press and hold for 10 seconds to start the self-cleaning process. <i>see below for details.</i>
ON	Starts preheating process, before use.
OFF	Stops the preheating process, firestorm will not work after this.
5S	5-second spark effect, Firestorm emits sparks for 5 seconds
10S	10-second spark effect, Firestorm emits spark for 10 seconds
20S	20-second spark effect, firestorm emits spark for 20 seconds
30S	30-second spark effect, firestorm emits spark for 30 seconds
Low	Continuous spark effect at low height.
Middle	Continuous spark effect at middle height.
High	Continuous spark effect high height.

Note: There is a 1 second delay between button press and FIRESTORM F3 response. Make sure you press the desired function button for at least 1 second before releasing the button.

Cleaning function

The FIRESTORM F3 has a self cleaning functions which can be activated using the wireless remote control. This function should be used every time after every use, the self cleaning function helps reduce the chances of poor performance due to clogged exit-chamber. This function will clean out the exit-chamber, it will not empty any unused powder from the tank.. Clean the machine and the working area after each use or at least once a day.

CLEANING PROCESS: Allow cool down time before cleaning or handling the FIRESTORM F3.

ξ This process will last for 15 seconds, make sure you understand this process and take the necessary safety precautions to avoid injury. During the cleaning process the FIRESTORM will emit spark, the sparks coming out indicates powder is in the exit chamber. The sparks will stop coming out once the exit chamber is empty, to end the process you can press the STOP button. Or allow the process to end (maximum after 15 seconds from start). **Note: the cleaning-process does not empty the powder left inside the tank.**

ξ **To empty the tank,** flip the FIRESTORM upside down until no powder comes out, save all leftover powder in an air tight container.

OPERATION 4-BUTTON CONTROL PANEL

The built-in control panel features four hard-touch operating buttons, the display shows all operation status of the machine. The control panel allows the user to customize the DMX starting address and output height and switch on/off the automatic stop of spark output in case of the device tipping over. The machine can be operated with the wireless or cable remote control. Alternatively, it can be controlled with a DMX controller. DMX control will take priority over the manual operation.

Operating buttons

Button	Function
MENU	Scroll menu items
ENTER	Selects menu item being displayed
UP / DOWN	Setting values

Status indicators

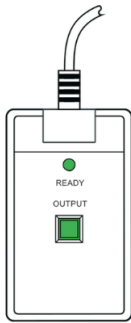
Display	Function
Heat/Warming up	The device is warming up
Ready	The device is ready for spark output
Wait/Standing by	Only powered on --Awaiting next action
Clean	Cleaning function

Menu items

Display		Function
Addr DMX512	0-512	Adjusting the starting address
Volume Out	1-100%	Adjusting the fountain height
Tip Over	ON/OFF	Activating or deactivating automatic stop of spark output in case of the device tipping over by more than 45° Note: The tipping sensor is a very important protection mechanism. It should always be activated.
Manual Test		Manual activation of spark output for test purposes with ENTER button
WorkTime		The left working time (by seconds)

WIRED REMOTE CONTROL (Sold separately)

The wired remote control is the simplest way to use the FIRESTORM F3 as it only requires a single button press to activate the spark output. It is not included; however, it is available and sold separately. You may contact JMAZ lighting or any of its distributors and request it by the description; "FIRESTORM F3 wired controller" ... To use it,



- 1 Simply make sure no cable is connected to the DMX input.
- 2 Connect the wired remote control to the CONTROLLER plug of the FIRESTORM F3. The base of the controller is magnetic allowing you to attach it to the spark machine or any metal surface.
- 3 Once the warm-up process is completed, the display screen on the FIRESTORM F3 will read "READY" and the LED on the remote control will glow GREEN.
- 4 To activate the spark output, press and hold the green button on the controller. The display on the FIRESTORM F3 will read "Volume Out" followed by the value set for the output volume. Release the button to deactivate the spark output, as the sparks will come out for as long as you keep the button pressed or no more time/powder is left in the machine.

DMX CONTROL

DMX512 Control

A DMX512 data link is required in order to control the device via DMX. The device provides 3-pin XLR connectors for DMX connection.

- 1 Using your DMX cable, connect the output of your DMX controller to the DMX input "DMX IN".
- 2 You can "daisy-chain" multiple machines by using the "DMX IN" and "DMX OUT" respectively.
- 3 If the cable length exceeds 300m or more than 20 devices are being used in the same line, it is recommended to use a DMX amplifier to ensure proper data transmission.

Adjusting the DMX start address

The machine reserves two control channels on the DMX controller. To ensure the control signals are properly directed to the machine, it must be adjusted to the DMX start address provided for it on the DMX controller. Use the MENU button to navigate to the menu item Address and confirm with ENTER. Then use the buttons UP and DOWN to set the address between 001 and 512. You can now start operating the machine via your DMX controller.

Note

Please make sure that you do not have any overlapping channels in order to control each device correctly and independently from any other fixture on the DMX data link. If two, three or more devices are addressed similarly, they will work similarly.

DMX functions

Channel 1 with Value	Function
0	Spark effect OFF
1-255	Spark effect ON 1-100 %
Channel 2 with Value	Function
0-20	Warming up function OFF, and the channel 1 is disabled
50-100	Warming up function ON, and the channel 1 is available
150-200	Cleaning function (15 seconds), channel 1 disabled

TECHNICAL SPECIFICATIONS

Rated voltage	AC120V/60Hz
Rated power	500 W
Fuse	8A
Pre-heating time	<8 min
Spark max height	1-4Meters 3- 13 Feet
Spark height change	Support
Wireless controller	Support
Display screen board	LCD
DMX	support
DMX channel	2
DMX range	1-512
Net weight	7Kg 15.4Lbs
Gross weight	8Kg 17.64Lbs
Carton size	300*300*320 mm / 12x12x12.6

Specifications are subject to change without notice due to product improvements.

CLEANING AND MAINTENANCE

CAUTION!



Handling granules

Keep the granule away from moisture and ignition sources. Do not smoke. Avoid dust formation. Always wear protective clothes, gloves and glasses. Always ensure sufficient ventilation. In case of fire, use metal fire powder (fire class D) or dry sand as extinguishing agents.

Cleaning of the surface and the working area

Clean the machine and the working area after each use, disconnect the device from power and allow it to cool before cleaning. Only dry-clean the device. Use recommended protective gear. Avoid dust formation. Any dust deposits are to be removed dust-free with a non-sparking tool and collected in a sealable container. Bigger accumulations of dust should be covered with plastic foil before being removed. Do not raise dust more than necessary during cleaning. Blow off dust only with an explosion-proof industrial vacuum cleaner with dust class H. Caution! The material chemically reacts with water. Keep away from water!

Cleaning after every use: Very important!

Please use the self-cleaning function (mentioned before) after each use to clean the channels inside the heater from powder remnants. Failure to do so will result in clogged exit chamber. **Once the machine has cooled down**, remove the tank cap and flip-it upside-down to shake powder out of tank until it is empty. Store the leftover powder in a sealable container until reuse.

Storing leftover powder

Store any leftovers in the original containers if possible. The containers are to be marked explicitly and permanently and stored air-tight in a dry, well-ventilated room until reuse. The storage temperature must not exceed 20°C/68°F. Keep away from moisture. Do not store with materials that might cause harmful chemical reactions with the powder.

All other maintenance operations are only to be carried out by authorized dealers. Do not try to repair the device by yourself.

Should you need any spare parts, please use genuine parts. Should you have further questions, please contact JMAZ lighting directly or one of its authorized dealers.

LIMITED WARRANTY

WARRANTY DOES NOT COVER

1. Damaged due to improper installation or operation, negligence, abuse or not following the instructions, warnings or acceptable industry procedures listed on this manual.
2. Damage caused during shipment or transportation of the product. All claims of this nature must be presented to the carrier.
3. Damage caused by acts of God, war, or civil disturbance, including without limitation, flood, fire, storms, earthquakes or other acts of nature.
4. Any expenses caused for not knowing how to setup or handle the product.
5. Any product without the original serial number and factory seal, or has been serviced or modified without the authorization of JMAZ lighting.
6. Any product not distributed by an authorized JMAZ lighting dealer.
7. The FIRESTORM comes with one

TO OBTAIN WARRANTY SERVICE:

Contact the customer service center for assistance 626.380.0883, a detailed description of the problem is required for service. Our warranty Dept. will use 2 factors to determine warranty availability, 1. Time since you bought the product and 2. Place of purchase. All claims should be accompanied by Proof of purchase (i.e. a receipt/invoice) to determine warranty availability. An over the phone consultation will be held to help solve the issue without having to send it in, however, if the product needs to be sent to JMAZ lighting under warranty, you will receive an authorization form from the service center. The product must be delivered pre-paid to the service center. JMAZ lighting will, at our option, repair the product or replace it with a new or certified-new-reconditioned product. The replacement will be shipped back pre-paid free-of-charge, provided the product is covered under warranty.

Non-Warranty related products: products no longer under warranty or not covered under warranty. JMAZ lighting will test and diagnose free-of-charge any product no longer working (simply pay shipping to and from), our service dept. representative will email you a service form prior to mail in the product. Once we have tested and diagnose the problem, JMAZ lighting will contact you with an estimate repair cost.

MATERIAL SAFETY DATA SHEET

MATERIAL SAFETY DATA SHEET

Composite Ti for Stage Effect

CONTENT

- SECTION 1: Identification of the substance and of the company
- SECTION 2: Composition/information on ingredients
- SECTION 3: Hazards Identification
- SECTION 4: First Aid measures
- SECTION 5: Firefighting measures
- SECTION 6: Accidental release measures
- SECTION 7: Handling and storage
- SECTION 8: Exposure control/personal protection
- SECTION 9: Physical and chemical properties
- SECTION 10: Stability and reactivity
- SECTION 11: Toxicological information
- SECTION 12: Ecological information
- SECTION 13: Disposal considerations
- SECTION 14: Transport information
- SECTION 15: Regulatory information
- SECTION 16: Other information

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SECTION 1: Identification of the substance and of the company

Product Name	Composite Ti for Stage Effect Firestorm F3		
Manufacturer/Company	Name	JHE TECHNOLOGY INC.	
	Address		
	Telephone	626.380.0883	
	Fax	626.386.3330	
	Email	support@jmazlighting.com	
Emergency Telephone Number	+1.626.380.0883		

SECTION 2: Composition Information on ingredients

Composition:

Chemical Name	% by weight	CAS No.	Dimensions	Molecular Formula
Titanium (TI)	80	7440-67-7	180-300um	TI
Zirconium (ZR)	20	7440-32-6		ZR

Note: Abbreviation CAS No. is Chemical Abstract Service Registry Number

SECTION 3: Hazards identification

Fatalness Grade	In accordance with the Catalog of Hazardous Chemicals of China, the materials are not dangerous goods
Invasion Route	Inhalation
Health Hazards	There is no report of composite Ti for stage effect in industry.
Environment Hazards	No known significant effects.
Burn and Burst Danger	The material is not easy to burn.

SECTION 4 & 5 : First Aid measures & Firefighting measures

Hazard characteristics	Composite Ti for stage effect can burn when in contact with high heat in an open fire and it will burn/continue to burn in carbon dioxide and nitrogen gas.
Harmful combustion product	Titanium (TI)
Suitable extinguishing media	Dry Chemical Extinguishing Agents or Sand
Unsuitable extinguishing media	Water, Foam Extinguisher or Carbon Dioxide (CO2)

SECTION 6: Accidental release measures

Release Measures	Wear appropriate respiratory and protective equipment specified in special protection section. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust.
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SECTION 7: Handling and storage

Precautions for safe handling	Operator must undergo special training & strictly comply with the operating procedures. The operator is recommended to wear self-absorption filter dust masks, chemical safety glasses and chemical gloves. Workspace must be away from fire and heat sources. Always provide sufficient ventilation to maintain concentrations at or below TLV. Avoid producing dust. Avoid contact with acids. Store in a cool dry place in a tightly sealed container.
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Conditions for safe storage	Store in a cool well ventilated warehouse away from fire and heat sources. This should always be stored separately from acids and always avoid mixed storage. Ventilation systems must provide sufficient ventilation to maintain concentrations at or below TLV. The storage area should be equipped with appropriate materials to contain leakage.
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SECTION 8: Exposure Controls/Personal protection

MAC (mg/m3)	OSHA PEL: 5mg/m3 as ZIRCONIUM ACGIH TLV: 5mg/m3 as ZIRCONIUM
Monitoring method	Two xylenol orange colorimetry
Engineering control	General special protection not required, but always prevent dust hazards
Respiratory protection	NIOSH approved dust/mist respirator
Eye protection	Wear chemical safety glasses
Body protection	Wear general protective clothing
Hand protection	Wear chemical gloves

SECTION 9: Physical and chemical properties

Appearance and properties: Grey/White Grain	PH: N/A
Melting point: 3034 Deg. F (Titanium)	
Relative density (Water=1) 5.7	
Saturated vapor pressure PSI N/A	
Critical temperature (F) N/A	Critical pressure PSI N/A
Ignition temperature (F) N/A	Flash point (F) N/A
Upper explosion limit: N/A	Lower explosion limit: N/A
Solubility: Insoluble in water	
Uses: In the manufacture of nuclear industry and corrosion resistant alloy, used as metallurgical oxygen and as a chemical reagent.	

SECTION 10: Stability and reactivity

Stability	Stable
Incompatibility:	Air, oxidizing agents, halogens, halocarbons, mineral acids
Conditions to avoid	Open flame
Polymerization hazard	Will not occur
Decomposition product	None

SECTION 11: Toxicological information

Acute toxicity	LD50: no data LC50: no data
Acute poisoning	N/A
Chronic poisoning	N/A
Irritation	Mild irritation
Sub-acute and chronic toxicity	N/A
Mutagenicity	N/A
Teratogenicity	N/A
Carcinogenicity	N/A

JMAZ LIGHTING / JHE TECHNOLOGY INC.,
313 NEWQUIST PLACE STE B, CITY OF INDUSTRY, CA 91745 (626-380-0883) ☎

SECTION 12: Ecological information

Eco toxicity	No data available
Biodegradability	N/A
Non-biological degradation	N/A
Biological accumulation	N/A

SECTION 13: Disposal considerations

Property of waste	N/A
Waste disposal method	Dispose of in accordance with local, state and Federal regulations

SECTION 14: Transport information

Dangerous goods Number	Not a hazardous material
UN Number	N/A
Packing mark	N/A
Packaging category	N/A
Packing	Galvanized drum with a large diameter seal cover and barrel lined with plastic film. Individual use packages are sealed plastic film.
Transportation note:	Keep away from open flames and high heat sources. Railway transportation prohibits humping.

SECTION 15: Regulatory information

Dangerous chemical safety management regulations (344 of the State Council, March 15, 2002), workplace safety use chemical regulations (423 decree of the labor department, 1966) and other laws and regulation provide the safe use, production, storage, transportation, loading and unloading of hazardous chemicals. Classification and Marking of Dangerous Chemicals (13690-92 GB) provide composite TI for stage effect as class 5.14 (In case of fire and high temperature material can burn).
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SECTION 16: Other information

Reference	
Filing time	January 1, 2018
Filing department	Technology & Design Department
Data audit department	Chief Engineering Office
Modification Description	Flammability of Composite Ti for stage effects relates to size. The smaller the size, the easier to burn. The size use in the range of 180-300um composite Ti for stage effects is not easy to burn.

FIRE DEPARTMENT WRITTEN NOTICE

THIS IS A WRITTEN STATEMENT CERTIFYING THAT THE RESPONDING FIRE DEPARTMENT HAS BE NOTIFIED OF THE USE OF FLAME EFFECTS ON 05/16/26.

ON 04/30/26 I CALLED HARRIS COUNTY ESD 21 FIRE DEPARTMENT VIA PHONE NUMBER 7138873905 AND SPOKE WITH LAURIE GROGG ABOUT THE FLAME EFFECTS TO BE USED AT SANDLEWOOD MANOR 22402 HOLLY CREEK TRAIL, TOMBALL, TX 77377 ON MAY 16, 2026 AT APPROXIMATELY 10:00PM.

**DATE FIRE DEPARTMENT WAS CONTACTED
04/30/26**

**NAME OF THE FIRE DEPARTMENT
HARRIS COUNTY ESD 21**

**NUMBER CALLED TO MAKE NOTIFICATION
7138873905**

**FIRE DEPARTMENT OFFICIALS FIRST AND LAST NAME THAT WAS NOTIFIED
LAURIE GROGG**

Tomball Flame Effects Plan Guidelines

Mike,

I'm trying to make sure you include everything that Council may ask about and you don't have anything regarding standby personnel or extinguishers. I'm including requirements for a pyrotechnics plan, which I think you have most of the items already, and extinguishers. Could you provide as much information regarding these as possible? Also, I need to know if the indoor event will need to bypass the smoke alarms or not because that adds additional requirements.

No, smoke alarms will not need to be bypassed.

The plan shall include the following:

(1) Name of the person, group, or organization sponsoring the production

Boxwood Manor. Avery Young - email: info@boxwoodmanorevents.com phone# 832-914-0222

(2) Date and time of day of the production

07/11/2026. 2 events, a) first at 7:45pm and b) the second at 11pm

(3) Exact location of the production

Boxwood Manor. 945 E Hufsmith Rd., Tomball, TX 77375

a) First event will be inside the event hall, machines set to each side of the main sliding doors entering the event hall.

b) Second event will be outside the main exit doors, machines set on each side of the walkway away from sidewalk.

(4) Name of the person actually in charge of firing the pyrotechnics (i.e., the pyrotechnic operator)

Zachary Spruill is the FEO

(5) Number, names, and ages of all assistants who are to be present

No assistants

(6) Qualifications of the pyrotechnic operator

Licensed FEO

(7) Pyrotechnic experience of the operator

1 year as a licensed FEO and fluent with the operation of cold sparks.

(8) Confirmation of any applicable state and federal licenses held by the operator or assistant(s)

FEO-3378409. License attached to previous email

(9) Evidence of the permittee's insurance carrier or financial responsibility

Admiral Insurance Company. Certificate # 20260113-08. Attached to previous email

(10) Number and types of pyrotechnic devices and materials to be used, the operator's experience with those devices and effects, and a definition of the general responsibilities of assistants

JMAZ Firestorm F3 cold spark machines. 4 cold spark machines will be utilized. Inside and outside cold sparks composite TI powder. Owned by the operator, fluent with the operating manual and has used devices many times. Operator will announce safety precautions and zone before each event. If anyone enters the safety zone, flame effects will be stopped. In case of fire, he will respond accordingly to extinguish any flames.

(11) Diagram of the grounds or facilities where the production is to be held that shows the point at which the pyrotechnic devices are to be fired, the fallout radius for each pyrotechnic device used in the performance, and the lines behind which the audience is to be restrained

Diagram attached

ON-SITE OPERATION

Cold Sparks will go off for 30 seconds 2 separate times in 30 second intervals.

Total of 1 minute of run time during a 3-minute period.

During grand entrance and exit.

- A. Grand Entrance: 7:45pm (10' distance from effect to combustibles & audience)
- B. Grand Exit: 11pm (15' distance from effect to combustibles & audience. Audience, including Bride & Groom will remain outside of fallout zone during display)

All effects are placed on floor.

Effect Height of 7' inside and 10' - 15' outside as per manufacture recommendation.

Diagram placement is approximate.

(12) Point of on-site assembly of pyrotechnic devices

All effects are placed on floor. Facing straight up.

(13) Manner and place of storage of the pyrotechnic materials and devices

Materials and devices are stored in closed equipment cases when not in use. Away from the audience.

(14) Safety data sheet (SDS) for the pyrotechnic material(s) to be used

MSDS's are attached

(15) Certification that the set, scenery, and rigging materials are inherently flame-retardant or have been treated to achieve flame-retardancy

Inside, 10' distance from effect to combustibles & audience at 7' flame height per manufacturer's recommendation. Outside, 15' distance from effect to combustibles & audience with 10-15' flame height.

(16) Certification that all materials worn by performers in the fallout area during use of pyrotechnic effects shall be inherently flame-retardant or have been treated to achieve flame-retardancy

N/A, operator will remain in the safe zone

(17) In the case of a hybrid flame effect, identification of those portions of the flame effect that require compliance with NFPA 160 and those portions that require compliance with NFPA 1126

N/A

The following shall be provided in addition to those extinguishers required for the building:

1. Two pressurized water extinguishers, each with a minimum rating of 2-A
2. Two extinguishers, each with a minimum rating of 10-B:C; two extinguishers that can extinguish the fuel source being used; or extinguishing agents that can extinguish the fuel source being used

(2) 10lb. ABC extinguishers will be present along with sand per manufacturer's recommendation.

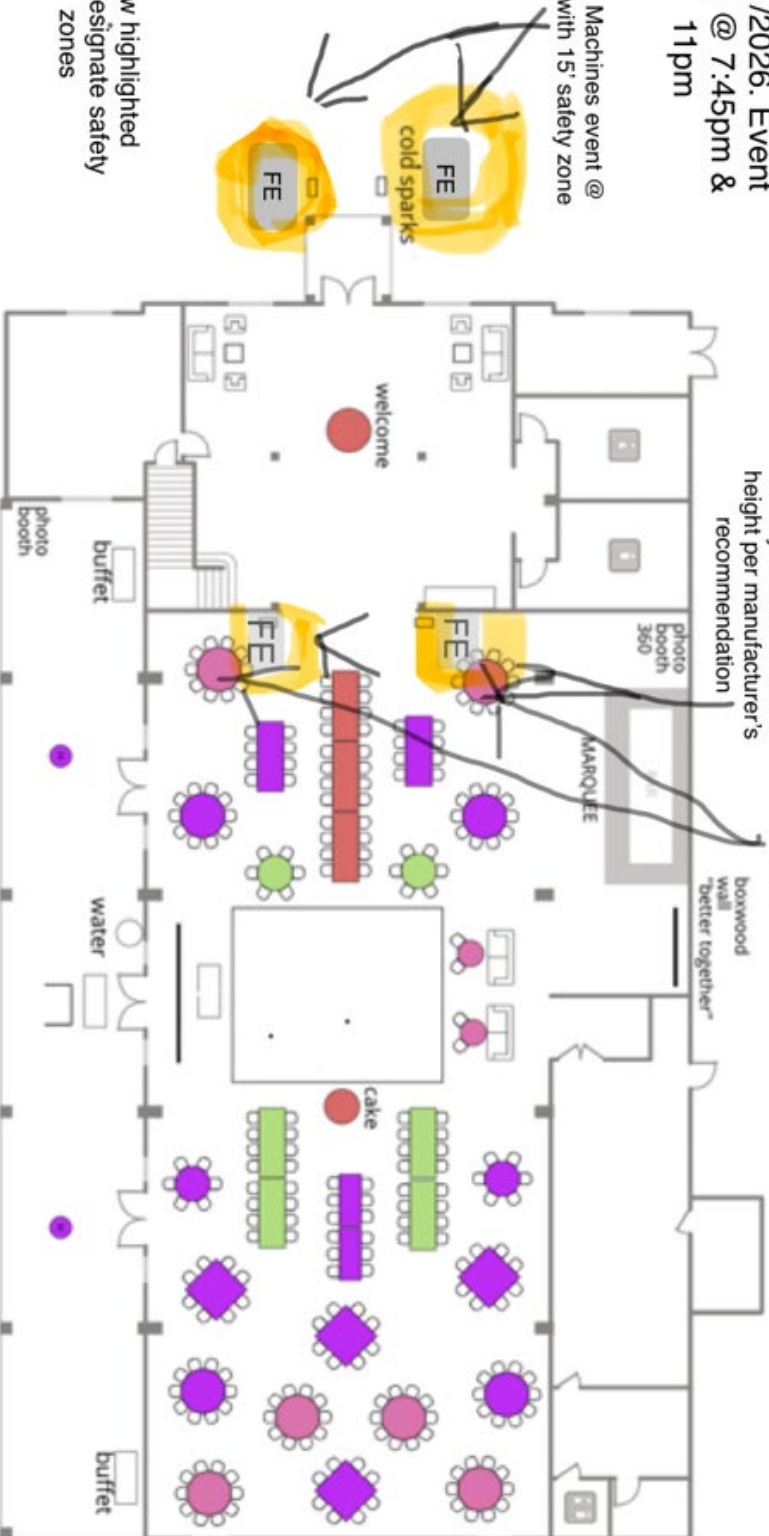
The extinguishers shall be placed so that at least one is located on each opposing side of the area where pyrotechnics are used.

Boxwood Manor

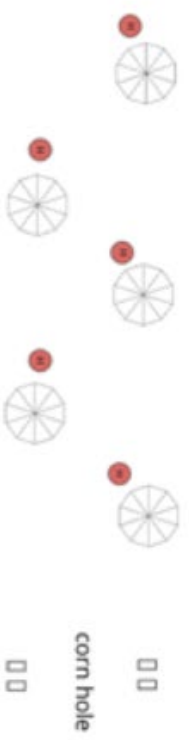
07/11/2026. Event times @ 7:45pm & 11pm

4 F.E. Machines event @ 11pm with 15' safety zone

Yellow highlighted areas designate safety zones



- Reviere Social patchwork moss w/ white poplin
- Reviere social seashell w/ white poplin napkin
- light pink w/ sage green napkin
- light blue poplin w/ sage green napkin





CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
06/22/2026

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Bowley Insurance Agency 100 Interstate 45 N, #122 Conroe, TX 77301 License#	CONTACT NAME: PHONE (A/C, No. Ext):		FAX (A/C, No):
	E-MAIL ADDRESS:		
INSURED EC Entertainment TX, LLC 6710 Spring Steubner Rd Ste 709-#1021 Spring, TX 77389	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A: Admiral Insurance Company		
	INSURER B:		
	INSURER C:		
	INSURER D:		
INSURER E:			
INSURER F:			

COVERAGES **CERTIFICATE NUMBER:** 20260113-08 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.


INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
<input checked="" type="checkbox"/>	COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC OTHER:			CA000003209-36-1217	06/04/2026	06/04/2027	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ MED EXP (Any one person) \$ PERSONAL & ADV INJURY \$ GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 1,000,000 \$
	AUTOMOBILE LIABILITY <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident) \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$
	UMBRELLA LIAB <input type="checkbox"/> OCCUR EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	Y / N	N / A				<input type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Wedding with cold sparks/flame effects/pyrotechnics, Boxwood Manor. The general liability insurance policy required by this section shall be conditioned to pay the amount of money the insured becomes obligated to pay as damages because of bodily injury and property damage caused by an occurrence involving the insured or insured's servant, officer, agent, or employee in the conduct of display of pyrotechnics and flame effects.

CERTIFICATE HOLDER

CANCELLATION

Date: 7/11/26 Boxwood Manor 945 E Hufsmith Rd Tomball, TX 77375 City of Tomball, TX	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE 
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Flame Effects Plan for Boxwood Manor on 07/11/2026

1. 4 flame effects (cold sparks) machines will be utilized. First event at 7:45pm, grand entrance and second event at 11pm for grand exit.
2. For grand entrance, 2 machines will be set up on each side of the main entrance doors inside. Per manufacturers recommendations, there will be a 10' safety zone with 7' flame height around the machines. No one, including bride and groom will be allowed inside the safety zone. Announcements will be made to the audience before each event.
3. For grand exit, the machines will be set up outside of the main entrance doors, 2 on each side. A 15' safety zone around the machines will be maintained. No one, including bride and groom will be allowed inside the safety zone.
4. After events, machines will be removed and stored in cases. After grand exit, the machines will be cleared/cleaned while no audience is present.
5. The events will be held on 07/11/2026. Once starting at 7:45pm ending at 7:48pm and again at 11pm ending at 11:03pm.
6. The Tomball Fire Department 1 was contacted on 06/22/2026. Spoke with Jeff Cook at 4:32pm.
7. Police department contacted at 281-351-5451 then transferred to Sgt White's extension. Voicemail left at 12:31pm.
8. Diagram of flame effects locations, time of event and safety zone attached.
9. Certificate of insurance attached.
10. Shooter: Zachary C. Spruill

FEO-3378409. Phone #713-202-8532. Email: zach@purelymail.com

Copy of license and ID attached.

Boxwood Manor

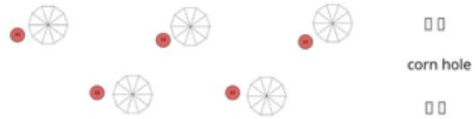
07/11/2026. Event times @ 7:45pm & 11pm

4 F.E. Machines event @ 11pm with 15' safety zone

4 F.E. Machines, inside event @ 7:45pm with 10' safety zone at 7' flame height per manufacturer's recommendation



- Reviere Social patchwork moss w/ white poplin
- Reviere social seashell w/ white poplin napkin
- light pink w/ sage green napkin
- light blue poplin w/ sage green napkin



Safety Data Sheet
Cold Sparks Composite TI Powder

Issue Date: 01-01-2023

Revision Date: 01-01-2023

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifier

Identification on the Label/Trade Name:	Cold Sparks Composite TI Powder
Additional Identification:	Not Available
Identification of the Product:	See Section 3
Index Number:	See Section 3
REACH Registration No.:	See Section 3

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

1.2.1 Identified Uses

A kind of consumables of the deductive equipment

1.2.2 Uses Advised Against

Not Available

1.3 Details of the Supplier of the Safety Data Sheet

Supplier	Global Special Effects 11054 County Road 71 Lexington, AL 35648 info@globalspecialeffects.com (256) 229-5551
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1.4 Emergency Telephone Number

(256) 229-5551

SECTION 2: Hazards Identification

2.1 Classification of the Substance or Mixture

2.1.1 Classification:

This product does not meet the criteria for classification in any hazard class according to Regulation (EC) No 1272/2008 on classification, labeling, and packaging of substances and mixtures.

2.2 Label Elements

Hazard Pictograms:	No Hazard Pictogram is Used
Signal Word(s):	No Signal Word is Used
Hazard Statement:	Not Applicable
Precautionary Statement:	Not Applicable

2.3 Other Hazards

Not Available

SECTION 3: Composition/Information on the Ingredients

Substance/Mixture:	Mixture
Ingredients:	Metal Granules Mixture This metal granules ingredients are in Compliance with the Dangerous Substances Directive 67/548/EEC or Regulation (EC) No. 1272/2008.

SECTION 4: First Aid Measures

4.1 Description of First Aid Measures:

In all cases of doubt, or when symptoms persist, seek medical attention.

4.1.1 In Case of Inhalation

Move to fresh air and keep at rest in a comfortable position for breathing.
Seek medical attention if adverse health effects persist or are severe.

4.1.2 In Case of Skin Contact

Wash off with soap and plenty of water. Remove any contaminated clothing.
Seek medical attention if adverse health effects persist or are severe.

4.1.3 In Case of Eye Contact

Rinse eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove contacts if able. Seek medical attention if adverse health effects persist or are severe.

4.2 Most Important Symptoms and Effects, Both Acute and Delayed:

The product is not classified as harmful to human health.

4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed:

Symptomatic treatment

SECTION 5: Firefighting Measures

5.1 Extinguishable Media:

Suitable Extinguishing Media:	Sand
Unsuitable Extinguishing Media:	Dry powder fire extinguisher, water, carbon dioxide, and foam air extinguisher

5.2 Special Hazards Arising from the Substance or Mixture

The material could be burned when contact with open fire and it could also be burned in carbon dioxide and nitrogen gas. Harmful combustion product: carbon oxides.

5.3 Advice for Firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment, and Emergency Procedures

6.1.1 For Non-Emergency Personnel: Evacuate area. Provide adequate ventilation. Recommended emergency personnel wear self-positive pressure respirator, wear ordinary work clothes.

6.1.2 For Emergency Responders: Avoid skin and eye contact. Refer to Section 8 of Safety Data Sheet for personal protection details.

6.2 Environmental Precautions:

Avoid disposing into drainage/sewer system or directly into the aquatic environment.

6.3 Methods and Material for Containment and Cleaning Up:

Methods for Cleaning Up:

A small amount of leakage: Use non-sparking tools to collect, dry, and clean the material and store in a container with a cap for recovery.
A large number of leaks: Cover with plastic sheet or canvas. Use non-sparking tools to collect for recovery.

6.4 Reference to Other Sections:

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and Storage**7.1 Precautions for Safe Handling:****7.1.1 Protective Measures:**

Operator must undergo special training; strictly comply with the operating procedures. Recommend operator to wear self-absorption filter dust masks, chemical safety glasses, and chemical gloves. Workplace must be away from fire and heat source and no smoking. Ventilation systems and equipment must be explosion proof type. Avoid contact with acids. Carry lightly and maintain complete packaging to prevent leakage. Firefighting equipment and leakage emergency treatment equipment need to be equipped with enough variety and quantity.

7.1.2 Advice on General Occupational Hygiene

Do not eat, drink, or smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for Safe Storage, Including Any Incompatibilities:

For safety, store in a cool, ventilated warehouse. Warehouse must be away from direct fire and heat sources. Package should remain sealed. Avoid mixed storage and store separately from acids. Ventilation systems and equipment must be explosion proof type. Mechanical equipment and tools must not spark. Storage area should be equipped with appropriate material to contain leakage

7.3 Specific End Use(s)

No Data Available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

8.1.1 Occupational Exposure Limits:

Not Available

8.1.2: Additional Exposure Limits Under Conditions of Use:

Not Available

8.1.3 DNEL/DMEL and PNEC-Values:

Not Available

8.2 Exposure Controls:

8.2.1 Appropriate Engineering Controls:

General special protection is not necessary, but be mindful to prevent smoke and dust hazards.

8.2.2 Individual Protection Measure, Such as Personal Protective Equipment

Eye/Face Protection:

Goggles, when dust concentration exceeds the standard, wear chemical safety glasses.

Hand Protection:

Wear chemical gloves.

Body Protection:

Wear general protective clothing.

Respiratory Protection:

When dust concentration exceeds the standard, it is recommended to wear self-absorption filter dust masks.

Thermal Hazards:

Wear suitable protective clothing to prevent heat.

8.2.3 Environmental Exposure Controls:

Avoid discharge into the environment. Dispose of rinse water in accordance with local and national regulations.

SECTION 9: Physical and Chemical Properties**9.1 Information on Basic Physical and Chemical Properties**

Appearance:	Solid
Color:	Ash Black
Odor:	Odorless
Odor Threshold:	Not Available
pH:	Not Available
Melting Point/Range (°C):	Not Available
Boiling Point/Range (°C):	Not Available
Flash Point (°C):	Not Available
Evaporation Rate:	Not Available
Flammability Limit - Lower (%):	Not Available
Flammability (Solid, Gas):	Not Available
Ignition Temperatures (°C):	Not Available
Upper/Lower Explosive Limits:	Not Available
Vapor Pressure (20°C):	Not Available
Vapor Density:	Not Available
Relative Density:	5.7
Bulk Density (kg/m³):	Not Available
Water Solubility (g/l):	Insoluble in Water
n-Octanol/Water (log Po/w):	Not Available
Auto-Ignition Temperature:	4000°C
Dynamic Viscosity (mPa S):	Not Available
Explosive Properties:	Not Available
Oxidizing Properties:	Not Available

9.2 Other Information

Fat Solubility (Solvent - Oil to be Specified):	Soluble in hot concentrated acid, hydrofluoric acid, sulfuric acid, and aqua regia.
Surface Tension:	Not Available
Dissociation Constant in Water (pKa):	Not Available
Oxidation-Reduction Potential:	Not Available

SECTION 10: Stability and Reactivity

10.1 Reactivity:	The substance is stable under normal storage and handling conditions.
10.2 Chemical Stability:	Stable at room temperature in closed containers under normal storage and handling conditions.
10.3 Possibility of Hazardous Reactions:	No dangerous reactions known.
10.4 Conditions to Avoid:	Incompatible materials. Avoid heat, air, moisture.
10.5 Incompatible Materials:	Acid, oxygen, and lead.
10.6 Hazardous Decomposition Products:	Refer to Section 5.2.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects:

Acute Toxicity:	Not Classified.
Skin Corrosion/Irritation:	Not Classified.
Serious Eye Damage/Irritation:	Not Classified.
Respiratory or Skin Sensitization:	Not Classified.
Germ Cell Mutagenicity:	Not Classified.
Carcinogenicity:	Not Classified.
Reproductive Toxicity:	Not Classified.
STOT-Single Exposure:	Not Classified.
STOT-Repeated Exposure:	Not Classified.
Aspiration Hazard:	Not Classified.

SECTION 12: Ecological Information

12.1 Toxicity:

According to the criteria of the European Classification and Labeling System, the substance/product has not to be labeled as “dangerous for the environment.”

12.2 Persistence and Degradability:

Not Available.

12.3 Bioaccumulative Potential:

Not Available.

12.4 Mobility in Soil:

Not Available.

12.5 Results of PBT and vPvB Assessment:

Not Available.

12.6 Other Adverse Effects:

Not Available.

SECTION 13: Ecological Information

13.1 Waste Treatment Methods:

The material should be disposed by incineration in a chemical incineration in compliance with national and regional requirements.

SECTION 14: Transport Information

	Land Transport (ADR/RID)	Inland Waterways (AND)	Sea Transport (IMDG)	Air Transport (IACO/IATA)
UN Number	Not Regulated	Not Regulated	Not Regulated	Not Regulated
UN Proper Shipping Name	Not Regulated	Not Regulated	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated	Not Regulated	Not Regulated
Packing Group	Not Regulated	Not Regulated	Not Regulated	Not Regulated
Environmental Hazards	No	No	No	No
Special Precautions for User	Section 2.2	Section 2.2	Section 2.2	Section 2.2
Transport in Bulk According to Annex II of Marpol and the IBC Code	Not Regulated	Not Regulated	Not Regulated	Not Regulated

SECTION 15: Regulatory Information

15.1 Safety, Health, and Environmental Regulations/Legislation Specific for the Substance or Mixture

Relevant Information Regarding Authorization:	Not Applicable
Relevant Information Regarding Restriction:	Not Applicable
Other EU Regulations:	Employment restrictions concerning young persons must be observed. For use only by technically qualified individuals.
Other National Regulations:	Not Applicable

15.2 Chemical Safety Assessment:

No

SECTION 16: Other Information

16.1 Indication of Changes:

Amended by (EU) 2015/830

16.2 Abbreviations and Acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation for All Rail International Transportation of Dangerous Goods

ADN: European agreement concerning the International Carriage of Dangerous goods by Inland Waterways

IMDG: International Maritime Dangerous Goods Code

ICAO: International Civil Aviation Organization

IATA: International Air Transportation Association

LC50: Median Lethal Concentration

EC50: The effective concentration of substances that causes 50% of the maximum response

NOEC: No Observed Effect Concentration

DNEL: Derived No-Effect Level

PNEC: Predicted No-Effect Concentration

16.3 Key Literature References and Sources for Data

ECHA Registered Substances Data

16.4 Training Instructions:

Not Applicable

16.5 Further Information:

This information is based upon the present state of our knowledge. This SDS has been compiled as is solely intended for this product.

16.6 Notice to Reader:

Employers should use this information only as a supplement to other information gathered by them, and should make an independent judgment of suitability of this information to ensure proper use and protect the health and safety of others. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

SAFETY DATA SHEET

Creation Date 14-May-2010

Revision Date 21-Dec-2025

Revision Number 5

This safety data sheet was created pursuant to the requirements of: US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

1. Identification

Product Name Titanium powder, hydrided

Cat No. : 36678

CAS No 7440-32-6
Synonyms No information available

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous according to [US] OSHA (29 CFR 1910.1200, 2024)

Flammable solids	Category 1
Combustible dust	Yes

Label Elements

Signal Word

Danger

Hazard Statements

May form combustible dust concentrations in air
Flammable solid

**Precautionary Statements****Prevention**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Ground and bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Wear protective gloves/protective clothing/eye protection/face protection

Fire

In case of fire: Use CO₂, dry chemical, or foam to extinguish

Storage

Store in a well-ventilated place. Keep container tightly closed

Hazards not otherwise classified (HNOC)

None identified

Hazards classified under paragraph (d)(1)(ii) of 1910.1200

No information available

3. Composition/information on Ingredients

Component	CAS No	Weight %
Titanium, powder	7440-32-6	>95

4. First-aid measures

General Advice	If symptoms persist, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation	Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
Most important symptoms and effects	None reasonably foreseeable.
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Dry sand. approved class D extinguishers.
Unsuitable Extinguishing Media	No information available
Flash Point	No information available

Method -	No information available
Autoignition Temperature	250 °C / 482 °F
Explosion Limits	
Upper	No data available
Lower	No data available
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Dust can form an explosive mixture with air. Combustible material. Fine dust dispersed in air may ignite.

Hazardous Combustion Products

Titanium oxides.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	4	1	N/A

6. Accidental release measures

Personal Precautions	Ensure adequate ventilation. Use personal protective equipment as required. Avoid dust formation.
Environmental Precautions	Should not be released into the environment. See Section 12 for additional Ecological Information. Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system.
Methods for Containment and Clean Up	Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal.

7. Handling and Storage

Handling	Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.
Storage.	Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat, sparks and flame. Flammables area. Store under an inert atmosphere. Incompatible Materials. Acids. Strong oxidizing agents. Strong acids. Halogens. oxygen. Metals. Carbon dioxide (CO2). halocarbons.

8. Exposure controls / personal protection

Exposure Guidelines	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Engineering Measures	Use explosion-proof electrical/ventilating/lighting equipment.
Personal Protective Equipment	
Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:	Particulates filter conforming to EN 143.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance			
Physical State	Powder Solid		
Color	Grey		
Odor	Odorless		
Odor Threshold	No information available		
Property	Values	Remarks	• Method
Melting Point/Range	1660 °C / 3020 °F		
Softening Point	No data available		
Boiling Point/Range	3287 °C / 5948.6 °F	@ 760 mmHg	
Flash Point	No information available	Method -	No information available
Flammability (liquid)	Not applicable	Solid	
Flammability (solid,gas)	No information available		
Explosion Limits	No data available		
Autoignition Temperature	250 °C / 482 °F		
Decomposition Temperature	No data available		
pH	Not applicable		
Viscosity	Not applicable	Solid	
Water Solubility	Insoluble		
Solubility in other solvents	No information available		
Partition Coefficient (n-octanol/water)			
Vapor Pressure	No data available		
Density / Specific Gravity	4.510		
Bulk Density	No data available		
Vapor Density	Not applicable	Solid	
Particle characteristics	No data available		
Other Information			
Molecular Formula	Ti		
Molecular Weight	47.88		
Flammable solids	Burning rate or burning time = > 2.2 mm/s or < 45 secs		
	Wetted zone passed - Yes		
Evaporation Rate	Not applicable - Solid		

10. Stability and reactivity

Reactive Hazard	Yes
Stability	Moisture sensitive. Air sensitive. Pyrophoric: Spontaneously flammable in air.
Conditions to Avoid	Avoid dust formation. Keep away from open flames, hot surfaces and sources of ignition. Exposure to air. Incompatible products. Exposure to moist air or water.
Incompatible Materials	Acids, Strong oxidizing agents, Strong acids, Halogens, oxygen, Metals, Carbon dioxide (CO ₂), halocarbons
Hazardous Decomposition Products	Titanium oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Information on expected route of exposure

Inhalation Avoid breathing dust or spray mist. May be harmful if inhaled.
Ingestion May be harmful if swallowed.
Eyes Avoid contact with eyes.
Skin Avoid contact with skin.

Toxicology data for the components

Toxicologically Synergistic Products No information available

(b) skin corrosion/irritation; No data available

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
Respiratory No data available
Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity;

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Titanium, powder	7440-32-6	Not listed	Not listed	Not listed	Not listed	Not listed

(g) reproductive toxicity; No data available

(h) STOT-single exposure; No data available

(i) STOT-repeated exposure; No data available

Target Organs None known.

(j) aspiration hazard; Not applicable
Solid

Other Adverse Effects The toxicological properties have not been fully investigated.

Symptoms / effects,both acute and delayed No information available.

Other Adverse Effects The toxicological properties have not been fully investigated.

Endocrine Disrupting Properties This product does not contain any known or suspected endocrine disruptors.

12. Ecological information

Ecotoxicity

Do not empty into drains. May cause long-term adverse effects in the environment. Do not allow material to contaminate ground water system.

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN2546
Proper Shipping Name TITANIUM POWDER, DRY
Hazard Class 4.2
Packing Group II

TDG

UN-No UN2546
Proper Shipping Name TITANIUM POWDER, DRY
Hazard Class 4.2
Packing Group II

IATA

UN-No UN2546
Proper Shipping Name TITANIUM POWDER, DRY
Hazard Class 4.2
Packing Group II

IMDG/IMO

UN-No UN2546
Proper Shipping Name TITANIUM POWDER, DRY
Hazard Class 4.2
Packing Group II

15. Regulatory Information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Titanium, powder	7440-32-6	X	ACTIVE	-

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

- - Not Listed

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT) Not applicable

TSCA 12(b) - Notices of Export Not applicable

International Inventories

China, X = listed, Australia, U.S.A. (TSCA), Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), Korea (KECL), China (IECSC), Japan (ENCS), Philippines (PICCS), Taiwan (TCSI), Japan (ISHL), New Zealand (NZIoC), Japan (ISHL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Titanium, powder	7440-32-6	X	-	231-142-3	X	X		X	X	KE-33881

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Titanium, powder	-	X	-	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Authorisation/Restrictions according to EU REACH Not applicable

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous	REACH Regulation (EC 1907/2006) article 59 - Candidate List of

			Substances	Substances of Very High Concern (SVHC)
Titanium, powder	7440-32-6	-	-	-

Safety, health and environmental regulations/legislation specific for the substance or mixture

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Titanium, powder	7440-32-6	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?

Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Titanium, powder	7440-32-6	Not applicable	Not applicable	Not applicable	Not applicable

16. Other Information

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Print Date

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Revision Summary

Updated to the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) which published its Final Rule in the Federal Register revising the Hazard Communication Standard (HCS/HazCom), 29 CFR 1910.1200 (2024) (HCS §1910.1200, 2024), May 20, 2024, effective July 19, 2024.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS