

SAFETY DATA SHEET

SAFE-START FLAME CORD™

Safety Fire String / Slow-Burn Fire Cord

Manufacturer	Sam Mannino Enterprises, LLC	Revision	1.4 - Publication
Address	191 Anaconda Drive Pennsylvania Furnace, PA 16865-9443	Revision Date	August 25, 2026
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Website	www.sm-ent.com	Prepared for	U.S. workplace / product safety communication

FORMULATION BASIS: The treatment alcohol used for this product is **Specially Denatured Alcohol Formula 3-C (SDA 3-C)**. Formula No. 3-C is prepared by adding **5 gallons of isopropyl alcohol to every 100 gallons of alcohol**. The alcohol feed used by the manufacturer is 190 proof. Because the treatment liquid is absorbed into cotton cord and can evaporate after application, the exact retained percentages in the finished cord vary with production, drying, storage, and packaging conditions.

SECTION 1: IDENTIFICATION

Product identifier	Safe-Start Flame Cord(TM); Safety Fire String; Slow-Burn Fire Cord
Product form	Cotton/cellulose cord impregnated or coated with SDA 3-C specially denatured ethyl alcohol.
Recommended use	Ignition aid for fireplaces, fire pits, campfires, and wood or coal stoves.
Restrictions on use	Keep out of reach of children. Do not use for any application not authorized by the manufacturer. Do not hold the cord after ignition.
Emergency contact	814-692-4100 (company telephone; business hours). For a medical or fire emergency, contact local emergency services.

SECTION 2: HAZARD(S) IDENTIFICATION

Classification basis: The finished cord has not been tested as a whole for every OSHA/GHS flammability criterion. Because it intentionally contains/retains SDA 3-C and is designed to ignite and sustain flame, handle it as a readily ignitable flammable material. Component hazards are used conservatively for hazard communication.

Signal word: DANGER

- **H225:** Highly flammable liquid and vapor (applies to ethanol and isopropyl alcohol components).
- **H319:** Causes serious eye irritation (isopropyl alcohol component).
- **H336:** May cause drowsiness or dizziness (isopropyl alcohol component).
- Residual alcohol can produce flammable vapor. Burning cord can propagate flame and ignite nearby combustible materials.
- Hot or burning cord can cause thermal burns. Combustion may produce carbon monoxide, carbon dioxide, smoke, and irritating decomposition products.
- Keep away from heat, sparks, hot surfaces, and open flames except during intended ignition. No smoking.
- Keep package tightly closed when not in use. Store cool, dry, and well ventilated, away from strong oxidizers.
- Do not coil, bunch, or place multiple cords side-by-side during ignition. Light one end only and maintain distance from the flame path.
- Wear eye protection and suitable gloves when handling bulk quantities or visibly wet product.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Concentration / description	Hazard relevance
Cotton / cellulose cord	9004-34-6	Majority of finished article by mass. Exact percentage depends on retained treatment liquid and drying state.	Combustible solid.
Ethyl alcohol (ethanol)	64-17-5	Primary component of the SDA 3-C treatment liquid. The alcohol feed is 190 proof (nominally 95% v/v ethanol before denaturing). Retained amount in the cord varies with application rate and evaporation.	Highly flammable liquid and vapor.
Isopropyl alcohol (2-propanol)	67-63-0	SDA 3-C denaturant. Formula No. 3-C is prepared by adding 5 gallons of isopropyl alcohol to every 100 gallons of alcohol. This is nominally about 4.8% v/v of the combined treatment liquid before volume-contraction effects.	Highly flammable; serious eye irritant; may cause drowsiness or dizziness.
Water	7732-18-5	Present in the 190-proof alcohol feedstock. Nominally about 5% v/v of the undenatured 190-proof feed; retained amount in finished cord varies with drying state.	Not classified as hazardous.

Composition note: The table describes the treatment system and denaturant. Exact concentrations in the finished cord vary because the volatile liquid can evaporate. The supplier SDS for the SDA 3-C alcohol should be retained with manufacturing records and used for any supplier-specific impurities or reportable constituents.

SECTION 4: FIRST-AID MEASURES

Inhalation	Move person to fresh air. Keep at rest. Seek medical attention if dizziness, headache, respiratory irritation, drowsiness, or other symptoms persist.
Skin contact	For unburned/wet product: wash exposed skin with soap and water and remove contaminated clothing. For thermal burns: cool with clean, cool running water; do not apply ice. Seek medical attention for significant burns.
Eye contact	Rinse cautiously with clean water for at least 15 minutes. Remove contact lenses if present and easy to do. Obtain medical attention if irritation persists.
Ingestion	Ingestion of the article is not an intended route of exposure. Rinse mouth. Do not induce vomiting. Seek medical advice if swallowed or symptoms occur.
Most important symptoms	Eye irritation; headache, dizziness, or drowsiness from elevated alcohol vapor; skin drying/irritation from wet product; thermal burns from ignited product.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media	Dry chemical, carbon dioxide (CO ₂), alcohol-resistant foam, water spray/fog, or media suitable for the surrounding fire.
Unsuitable media	Avoid a high-pressure solid water stream that may spread burning material.
Specific hazards	Product is intentionally combustible. Residual SDA 3-C may ignite readily. Alcohol flames can be difficult to see in some lighting. Vapors may travel to an ignition source and flash back.
Hazardous combustion products	Carbon monoxide, carbon dioxide, smoke, and irritating organic decomposition products.
Firefighter protection	Wear full protective equipment and positive-pressure self-contained breathing apparatus for significant fires or fires in enclosed areas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- Eliminate ignition sources and ventilate the area.
- Collect loose cord mechanically and place in a suitable closed container away from ignition sources.
- If free SDA 3-C liquid is present, absorb with noncombustible inert material such as sand or vermiculite and place in an appropriate waste container.
- Prevent free liquid from entering drains, sewers, or waterways. Follow applicable federal, state, and local requirements.

SECTION 7: HANDLING AND STORAGE

Safe handling	Do not cut, fray, grind, or mechanically process near ignition sources. Keep away from heat, sparks, hot surfaces, and flame until intended ignition. Avoid breathing concentrated vapor from bulk wet product. Wash hands after handling.
Use precautions	Use only in a clear, open ignition path. Keep face, hands, clothing, fuels, and bystanders away from the burning cord. Do not hold the cord after ignition.
Storage	Store tightly closed in original packaging in a cool, dry, well-ventilated area. Protect from direct sunlight and excessive heat. Separate from oxidizers and ignition sources.
Incompatible materials	Strong oxidizing agents; ignition sources; conditions that promote uncontrolled burning.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Substance	OSHA PEL	NIOSH REL
Ethanol	1000 ppm, 8-hour TWA	1000 ppm, 10-hour TWA
Isopropyl alcohol	400 ppm, 8-hour TWA	400 ppm TWA; 500 ppm STEL

- General room ventilation is normally adequate for sealed retail product. Use local exhaust or increased ventilation where bulk wet cord is processed or strong alcohol odor is present.
- Safety glasses are recommended during bulk handling. Wear chemical-resistant gloves, such as nitrile, when handling visibly wet cord or free SDA 3-C liquid.
- Normal handling of sealed retail product generally does not require respiratory protection. If occupational exposure may exceed applicable limits, use a properly selected respirator under a compliant respiratory-protection program.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White or natural-colored cotton string/cord; may feel damp when appreciable treatment liquid remains.
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Odor	Alcohol-like when residual SDA 3-C is present.
Physical state	Solid article containing/retaining a volatile liquid component.
pH	Not applicable to finished article.
Melting/freezing point	Not determined for finished article.
Boiling point	Finished article: not applicable. Ethanol component approximately 78 C (172 F); isopropyl alcohol approximately 82 C (180 F).
Flash point	Finished article: not determined. Ethanol component approximately 13 C (55 F); isopropyl alcohol approximately 12 C (54 F), closed-cup values may vary by method.
Flammability	Readily combustible/ignitable; intended to burn as a fire-starting cord.
Explosive limits	Finished article: not determined. Alcohol vapors can form flammable mixtures with air.
Vapor pressure	Not determined for finished article; residual alcohol can generate vapor.
Solubility	Cotton/cellulose is insoluble in water; ethanol and isopropyl alcohol are miscible with water.
Auto-ignition temperature	Finished article not determined.

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Product is designed to ignite and sustain flame when exposed to an ignition source.
Chemical stability	Stable under recommended storage conditions when kept closed, cool, dry, and away from ignition sources.
Hazardous reactions	Uncontrolled combustion may occur in contact with flame, sparks, hot surfaces, or strong oxidizers.
Conditions to avoid	Heat, sparks, static discharge, open flame, hot surfaces, and excessive temperature.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition	Carbon monoxide, carbon dioxide, smoke, and irritating decomposition products during combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

The finished product has not been tested as a whole. Toxicological information is based primarily on the ethanol and isopropyl alcohol components and expected use conditions.

- Likely routes of exposure: eye/skin contact during bulk wet handling; inhalation of alcohol vapor; accidental ingestion is unlikely.
- Acute effects: elevated alcohol vapor concentrations may cause headache, dizziness, drowsiness, and irritation. Isopropyl alcohol can cause serious eye irritation.
- Skin: repeated or prolonged contact with visibly wet product may dry or irritate skin.
- Thermal injury: burning cord can cause serious burns.
- Carcinogenicity: no carcinogenic classification is assigned here to the finished product based on the disclosed formulation.
- Chronic effects: repeated occupational exposure to high alcohol vapor concentrations should be controlled.

SECTION 12: ECOLOGICAL INFORMATION

No ecological testing has been performed on the finished product. Ethanol and isopropyl alcohol are expected to biodegrade and are miscible with water; concentrated releases may adversely affect aquatic environments. Cotton/cellulose is biodegradable. Avoid uncontrolled release of free treatment liquid or large quantities of product to surface water or drains.

SECTION 13: DISPOSAL CONSIDERATIONS

- Dispose of unused product in accordance with federal, state, and local requirements applicable to flammable materials and wastes.
- Do not place visibly wet product or free SDA 3-C into ordinary trash where it could encounter ignition sources.
- Completely extinguished and cooled burned residue may generally be handled as ordinary solid waste unless contaminated with other hazardous materials; local requirements control.
- Do not pour residual SDA 3-C into drains, sewers, surface water, or onto the ground.

SECTION 14: TRANSPORT INFORMATION

U.S. DOT classification must be made by the shipper based on the actual product and packaging offered for transportation. A solid containing absorbed flammable liquid with no free liquid may fall under the shipping description UN3175, Solids containing flammable liquid, n.o.s. (ethanol/isopropanol), Class 4.1, subject to applicable 49 CFR conditions and exceptions.

Potential UN number	UN3175, when the product and package meet the applicable description.
Potential proper shipping name	Solids containing flammable liquid, n.o.s. (ethanol, isopropanol).

Potential hazard class	4.1
Potential packing group	II, when applicable based on the liquid component and regulatory criteria.
Free liquid present	If visible/free treatment liquid is present, or if the package does not meet the conditions for an absorbed-liquid solid, the classification may change. Do not ship until the actual configuration is classified under 49 CFR.

Carrier and mode-specific requirements can differ. The shipper is responsible for classifying each package size and shipping configuration.

SECTION 15: REGULATORY INFORMATION

- OSHA Hazard Communication: ethanol and isopropyl alcohol are hazardous chemicals due to flammability; isopropyl alcohol also presents eye-irritation and narcotic-effect hazards.
- SDA 3-C: the disclosed denaturant system is Specially Denatured Alcohol Formula No. 3-C, using isopropyl alcohol as the denaturant.
- TSCA: ethanol, isopropyl alcohol, water, and cellulose are established chemical substances. Supplier-specific impurities or additives must be evaluated from the raw-material SDS.
- SARA 311/312: product containing significant retained flammable alcohol may present a fire hazard; facility reporting applicability depends on inventory, thresholds, and applicable law.
- State/local: fire-code, storage, labeling, sale, and transport requirements may apply.

SECTION 16: OTHER INFORMATION

Revision date	August 25, 2026
Revision number	1.4 - Publication
Supersedes	Revision 1.3 (Rebuilt), August 25, 2026
Key formulation update	190-proof treatment alcohol is identified as SDA 3-C. Isopropyl alcohol (CAS 67-63-0) is identified as the denaturant and incorporated into hazard, exposure, toxicology, regulatory, and transport sections.
Formulation basis	Cotton/cellulose cord treated with 190-proof ethyl alcohol denatured as SDA 3-C; retained treatment liquid varies with processing and evaporation.
Publication controls	Manufacturer should retain the current supplier SDS/COA for the SDA 3-C alcohol, production formulation records, packaging specifications, and any applicable finished-product or transport testing.

Disclaimer: The information in this SDS is provided in good faith based on the disclosed formulation and recognized safety information for the components. Because the final cord is an absorbent combustible article with variable retained volatile liquid, the manufacturer remains responsible for confirming the actual production formulation, labeling, packaging, storage controls, finished-product hazards, and transportation classification applicable to each commercial configuration.