

Standard Operating Procedure for Propane-style Torch Use

Butane

Purpose

This SOP establishes safe procedures for using a butane torch to create planting holes in landscape/weed barrier fabric for agricultural and ecological field research.

Scope

This procedure applies to all personnel using butane torches to burn holes in polypropylene weed barrier fabric during field preparation and planting operations.

Personal Protective Equipment (PPE)

- Safety glasses or goggles (required)
- Heat-resistant gloves (required)
- Long-sleeved, non-flammable clothing (required)
- Closed-toe shoes

Pre-Work Requirements

Site Assessment

- Check local fire danger level and confirm open flame use is permitted in your area
- Ensure adequate ventilation for outdoor work; butane combustion produces carbon monoxide
- Clear minimum 10-foot radius of all dry vegetation, brush, mulch, wood chips, and flammable materials
- Establish fire extinguisher or water source within immediate reach

Equipment Inspection



- Inspect butane torch for cracks, leaks, loose connections, or damaged components
- Verify fuel level is adequate for planned work
- Test ignition mechanism before beginning fieldwork
- Confirm fabric material is polypropylene or appropriate synthetic woven material suitable for burning

Weather Considerations

- Work on damp or dewy days when possible; moisture in the ground and on fabric improves control
- On dry days, wet down the fabric surface with water/hose before burning to reduce fire risk and improve heat control
- Do not conduct burning operations during high wind conditions

Operating Procedure

Setup

1. Lay fabric flat on prepared soil surface
2. If conditions are dry, thoroughly water the fabric area before beginning
3. Position fire extinguisher or water source within arm's reach
4. Don all required PPE before handling torch

Ignition

1. Hold torch firmly with secure grip
2. Point nozzle away from yourself, others, and flammable materials during ignition
3. Ignite torch according to manufacturer instructions
4. Allow torch to warm up briefly for optimal performance

Burning Holes

1. Position torch perpendicular to fabric surface at appropriate distance (typically 2-6 inches depending on torch intensity)
2. Apply heat using controlled movements; use heat rather than direct flame contact when possible
3. Move torch steadily to melt through fabric; burning cauterizes edges and prevents fraying
4. Turn off torch immediately after each hole or between holes if moving to new location



5. Keep fuel tank and hose away from active flame area
6. Never leave lit torch unattended

Shutdown

1. Turn off torch completely after completing work section
2. Allow 15-30 minutes cooling period before moving or storing torch
3. Verify all fabric edges have cooled and no embers remain
4. Monitor work area for 15 minutes after completion to ensure no smoldering

Health and Safety Warnings

- Burning polypropylene produces fumes that can cause eye and respiratory irritation; work in well-ventilated areas
- Torch flames can exceed 2,500°F (1,370°C) and cause severe burns
- Never point torch toward people, animals, or flammable materials
- Be aware that fabric debris and field materials can ignite; maintain clear workspace

Storage and Maintenance

- Store butane torch in cool, dry location away from direct sunlight and heat sources
- Keep torch out of reach of unauthorized personnel
- Store in designated case or holder when available
- Clean fabric debris from torch nozzle after use
- Check torch for damage before storage

Emergency Procedures

- In case of uncontrolled fire: use fire extinguisher or water source immediately
- For burns: initiate first aid protocols and seek medical attention
- Report all incidents and near-misses to supervisor
- Discontinue work if weather conditions deteriorate or fire risk increases

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