

# Fire Extinguishers



EHS

Oklahoma State University  
Environmental Health and Safety

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# What you will learn...

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- Types of Fires
- Fire Triangle / Tetrahedron
- Types of Extinguishers
- How to Use an Extinguisher
- Rules for Fires

# Types of Fires

Fires are classified by the type **FUEL** they burn.

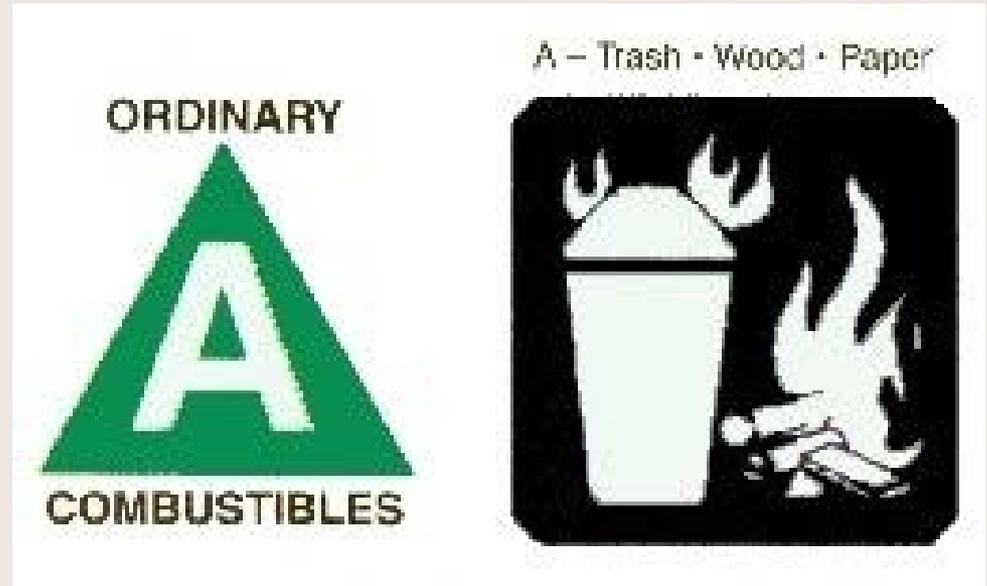
The 4 types are

- A
- B
- C
- D



# Class A Fires

Wood  
Paper  
Plastic  
Rags



# Class B Fires

Gasoline

Oil

Grease

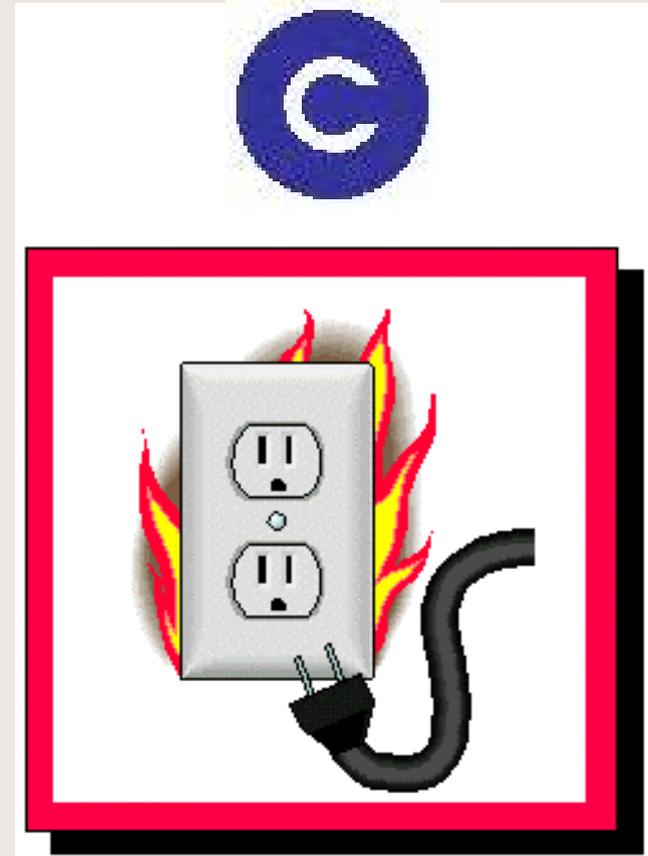
Paint



# Class C Fires

## Electrical Fires

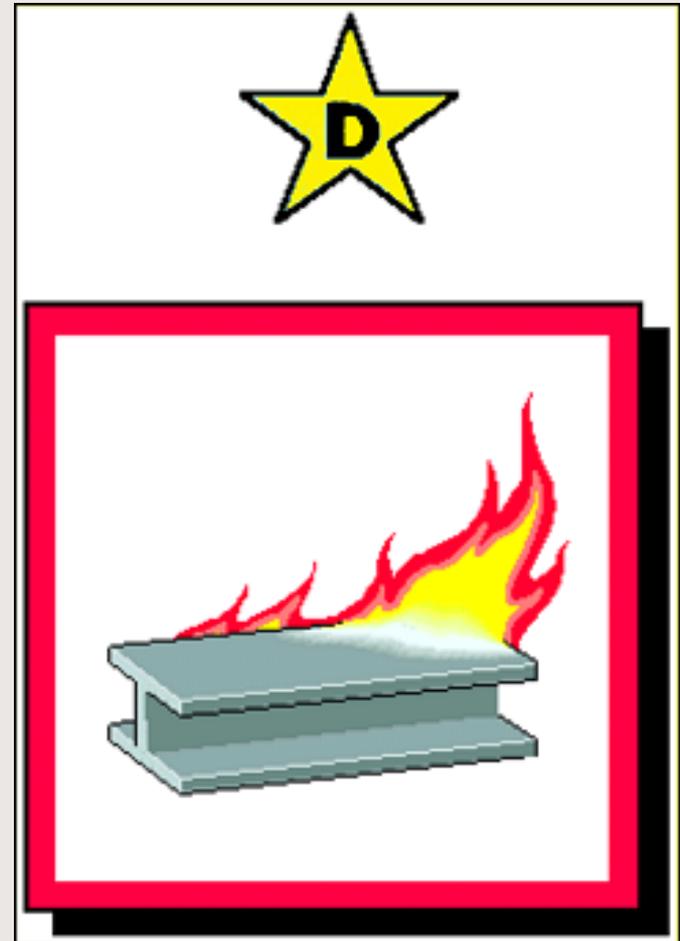
- Office Equipment
- Motors
- Switchgear
- Heaters



# Class D Fires

## Metals

- Potassium
- Sodium
- Aluminum
- Magnesium



# Fire Triangle / Tetrahedron

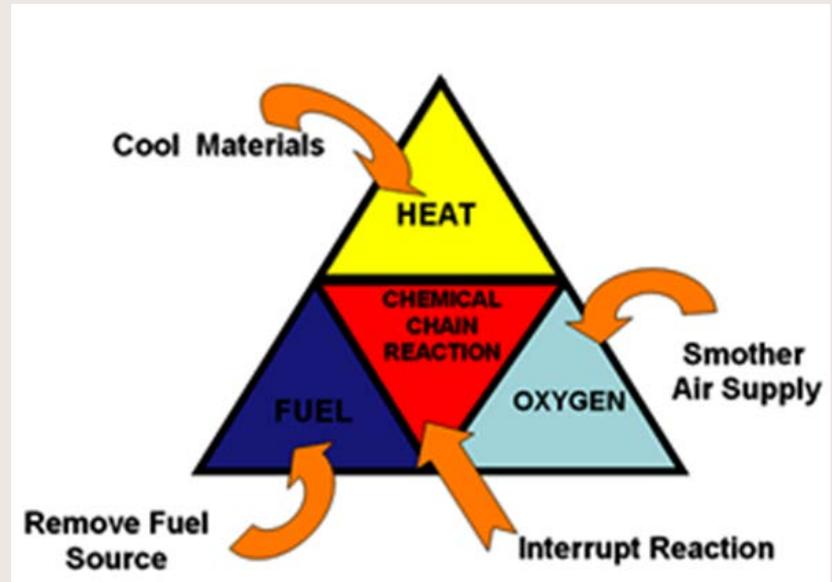
Fire Requires

Oxygen

Fuel

Heat

The uninhibited  
chemical chain reaction



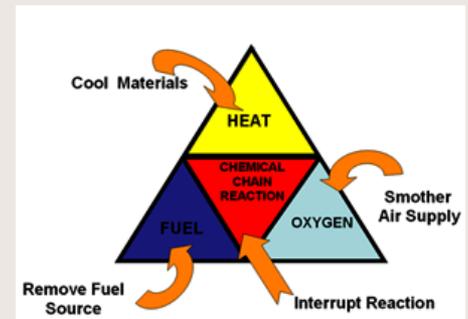
# Oxygen

Air is required as a catalyst

Can be oxygen from the air

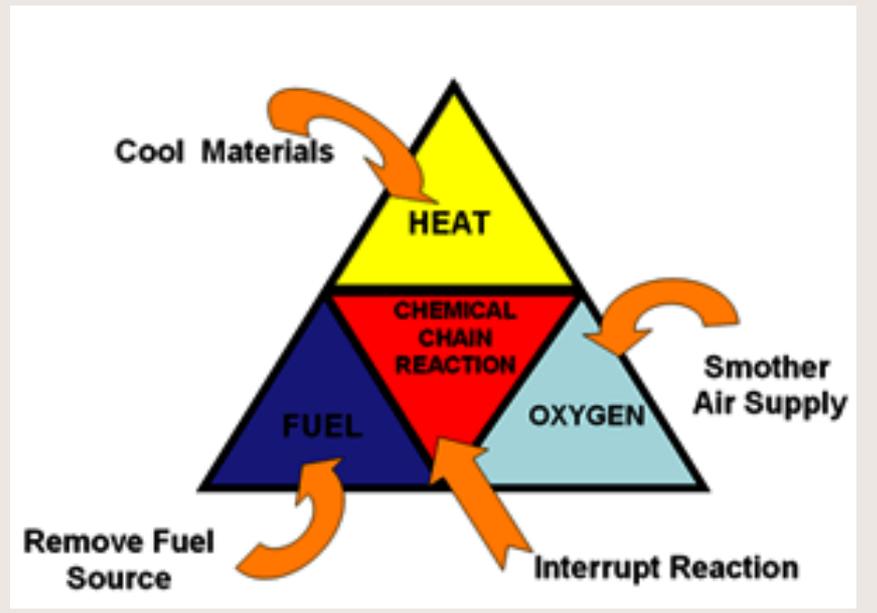
OR

From the fuel itself



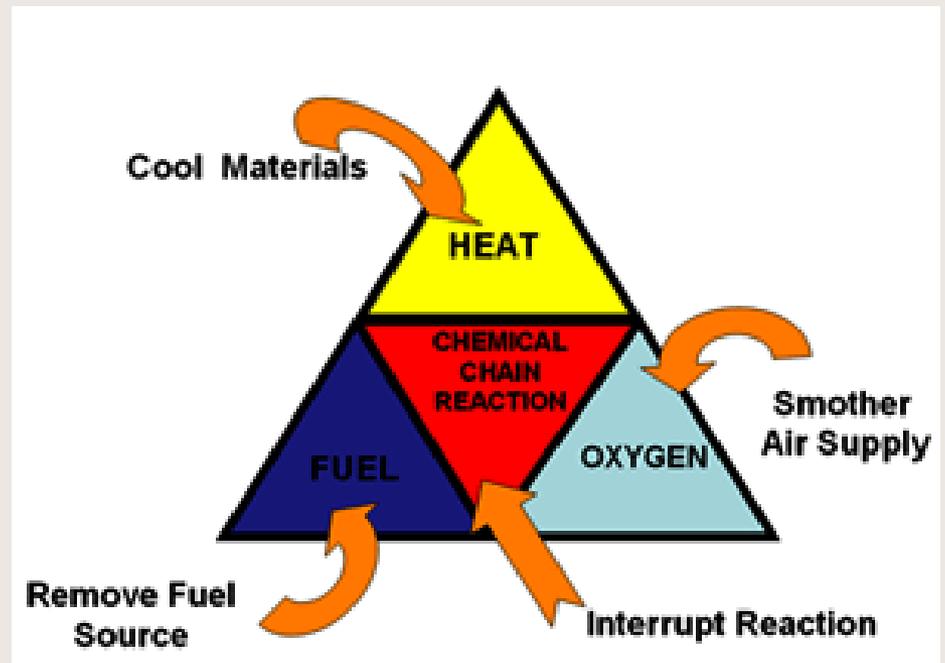
# Fuel

For a fire to start there must be something to burn.



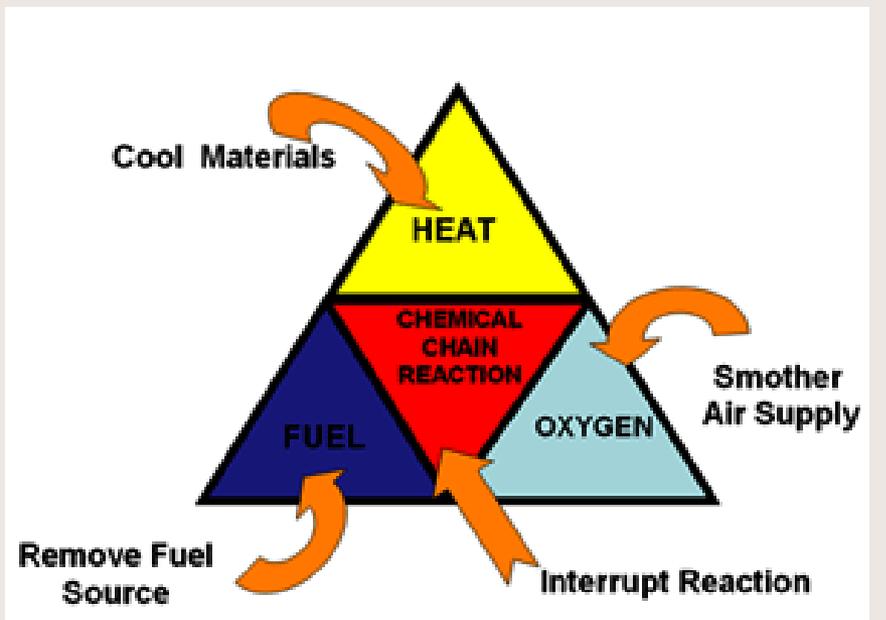
# Heat

For a fire to start, there must be a heat or ignition source.



# Chemical Chain Reaction

Is when the molecules of fire bind together to form fire.



# Types of Extinguishers

Type of fire extinguishers are classified by the type fires on which they may be used



# Class A

Used on  
Wood,  
Paper,  
Plastic



# Class B

Used on  
Flammable  
Liquid Fires



# Class C

Used on  
Electrical  
Fires



# Class D

Used on  
Metal Fires



# Type K

Type “K” Extinguishers are use  
in commercial kitchens to  
extinguish boiling oil fires.



# Using A Fire Extinguisher

Use the  
***PASS***  
System



# PASS

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Pull

Aim

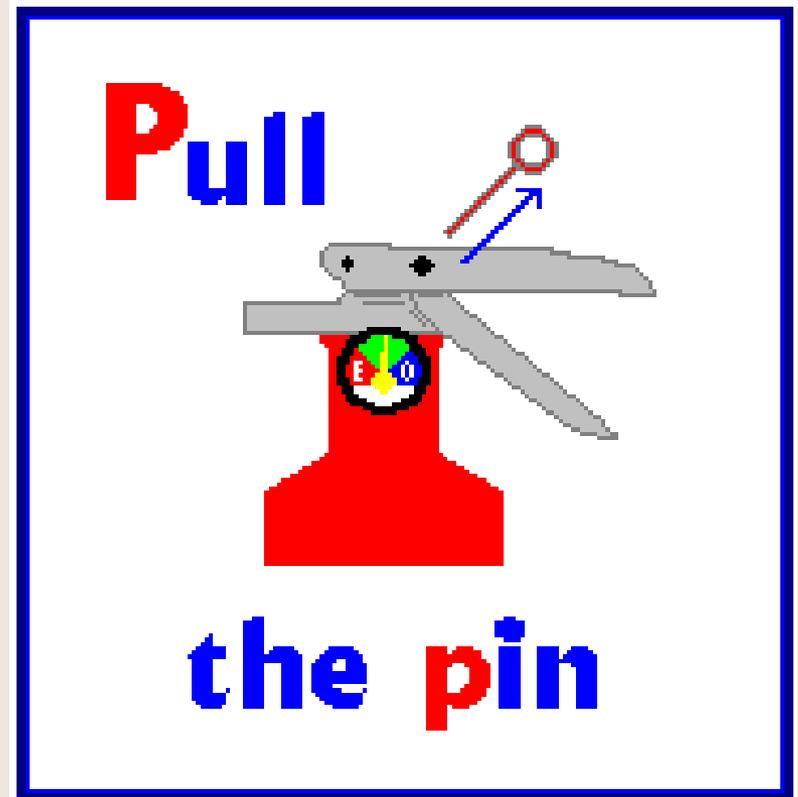
Squeeze

Sweep

# Pull

Pull the Pin

This will allow  
you to discharge  
the extinguisher.



# Aim

Aim at the base of the fire.

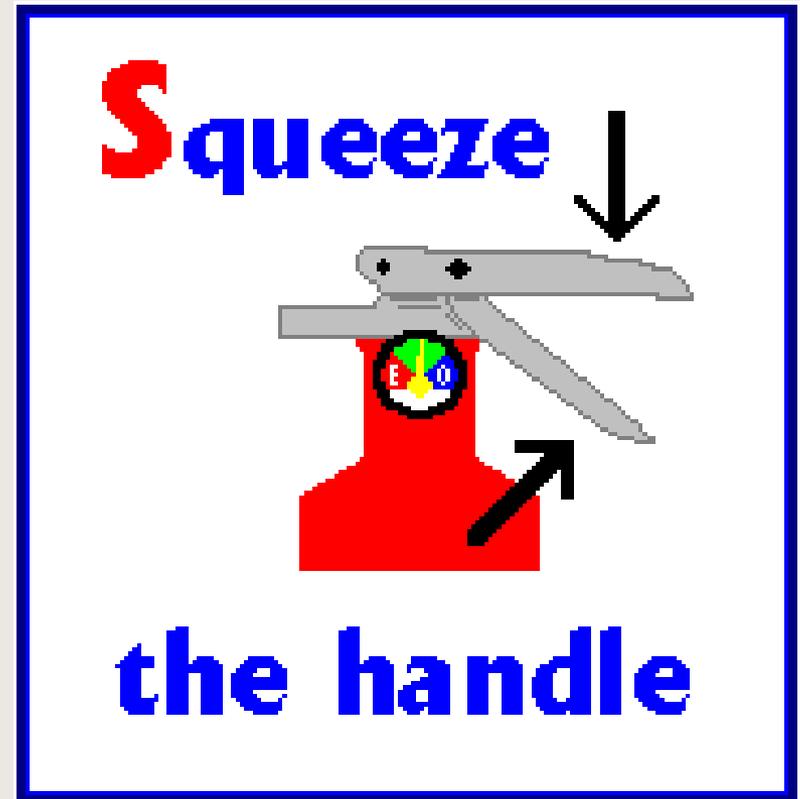
If you aim at the flames, the extinguishing agent will fly right through and do no good. You want to hit the fuel.



# Squeeze

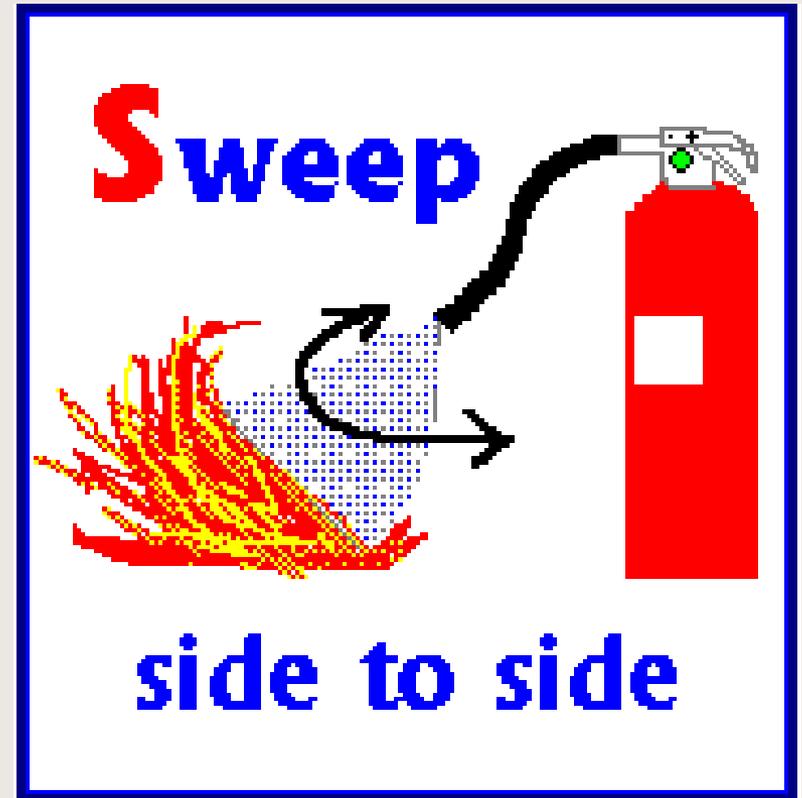
Squeeze the top handle or lever.

This depresses a button that releases the pressurized extinguishing agent in the extinguisher



# Sweep

Sweep from  
side to side  
until the fire is  
completely out.



# Rules for Fires

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- Fires are very dangerous
- Be certain that you will not endanger yourself or others when attempting to put out a fire.

# Fire Rules

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- Pull the Fire Alarm
- Call 911
- Assist anyone danger

# Fire Rules

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**Never Fight a Fire if you don't know what is burning**

If you don't know what is burning, you don't know what type of extinguisher to use.

Even if you have an ABC extinguisher, there may be something in the fire which is going to explode or produce highly toxic smoke.

# Fire Rules

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**Never Fight a Fire if the fire is spreading rapidly beyond the spot where it started**

The time to use an extinguisher is in the incipient, or beginning, stages of a fire. If the fire is already spreading quickly, it is best to simply evacuate the building, closing doors and windows behind you as you leave.

# Fire Rules

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**Never Fight a fire if you don't have adequate or appropriate equipment**

If you don't have the correct type or large enough extinguisher, it is best not to try to fight the fire.

# Fire Rules

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**Never fight a fire if you might inhale toxic smoke**

If the fire is producing large amounts of smoke that you would have to breathe in order to fight it, it is best not to try.

Gases from man made materials can be fatal in very small amounts.

# Fire Rules

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**Never fight a fire if your instincts tell you not to**

If you are uncomfortable with the situation for any reason, just let the fire department do their job.

# Fire Rules

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**The final rule is to always position yourself with an exit or means of escape at your back before you attempt to use an extinguisher to put out a fire.**

In case the extinguisher malfunctions, or something unexpected happens, you need to be able to get out quickly, and you don't want to become trapped. Just remember, **always keep an exit at your back.**

# Summary

- ❑ Types of Fires
- ❑ Fire Triangle / Tetrahedron
- ❑ Types of Extinguishers
- ❑ How to Use an Extinguisher
- ❑ Rules for Fires



# Environmental Health & Safety

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## Programs and Services

- Fire Protection Engineering
- Life Safety & Emergency Preparedness
- Environmental Compliance
- Laboratory Safety
- Occupational Safety
- Occupational Health and Medical Surveillance
- Materials Management
- Industrial Hygiene
- Chemical Hygiene
- Safety Training

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# Questions?

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