

CAMEO Chemicals

(Computer-Aided Management of
Emergency Operations)

FIND RESPONSE INFORMATION FOR
9,000 HAZARDOUS MATERIALS

SEARCH BY NAME, CAS REGISTRY
NUMBER, PREDICT REACTIVITY USING
MYCHEMICALS

AVAILABLE IN MULTIPLE FORMATS:
MOBILE, WEBSITE, DESKTOP
SOFTWARE

[HTTPS://CAMEOCHEMICALS.NOAA.GOV/](https://cameochemicals.noaa.gov/)





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CAMEO Chemicals

Chemical Datasheet

DIMETHYL SULFOXIDE

POISON

6

Chemical Identifiers

Hazards

Response Recommendations

Physical Properties

Regulatory Information

Alternate Chemical Names

What is this information?

CAS Number

67-68-5

UN/NA Number

2811

DOT Hazard Label

Poison

USCG CHRIS Code

DMS

NIOSH Pocket Guide

none

International Chem Safety Card

DIMETHYL SULPHOXIDE

Diamond

2

2

0

Hazard

Health

Flammability

Instability

Special

Value

2

2

0

Description

Can cause temporary incapacitation or residual injury.

Must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

Normally stable, even under fire conditions.

(NFPA, 2010)

General Description

A clear liquid, essentially odorless. Closed cup flash point 192°F. Vapors are heavier than air. Contact with the skin may cause stinging and burning and lead to an odor of garlic on the breath. An excellent solvent that can transport toxic solutes through the skin. High vapor concentrations may cause headache, dizziness, and sedation.

CAMEO Chemicals record for DMSO



Hazards

[What is this information?](#) ►

Reactivity Alerts

none

Air & Water Reactions

Denser than water and miscible in water.

Fire Hazard

Special Hazards of Combustion Products: Sulfur dioxide, formaldehyde, and methyl mercaptan can form (USCG, 1999)

Health Hazard

Slight eye irritation. (USCG, 1999)

Reactivity Profile



DIMETHYL SULFOXIDE decomposes violently on contact with many acyl halides and related compounds such as acetyl chloride, benzenesulfonyl chloride, benzoyl chloride, cyanuric chloride, phosphorus trichloride, phosphorus oxychloride, and thionyl chloride [Chem. Eng. News 35(9):87 (1957)].

Belongs to the Following Reactive Group(s)

- [Sulfonates, Phosphonates, and Thiophosphonates, Organic](#)

Potentially Incompatible Absorbents

No information available.

CAMEO Chemicals record for DMSO - Hazards

Response Recommendations

[What is this information?](#) ▶

Isolation and Evacuation

Excerpt from [ERG Guide 154](#) [Substances - Toxic and/or Corrosive (Non-Combustible)]:

IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Firefighting

Excerpt from [ERG Guide 154](#) [Substances - Toxic and/or Corrosive (Non-Combustible)]:

SMALL FIRE: Dry chemical, CO2 or water spray.

LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. If it can be done safely, move undamaged containers away from the area around the fire.

FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Do not use water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from fire until no sound is heard.

Non-Fire Response

Excerpt from [ERG Guide 154](#) [Substances - Toxic and/or Corrosive (Non-Combustible)]:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area. Do not touch damaged containers or spilled material unless advised by personnel trained in hazardous materials spill response. Prevent entry into waterways, sewers, basements or confined areas. Absorb or cover with dry earth, sand or other non-combustible material and then move to safe disposal area.

Protective Clothing

Butyl rubber gloves, safety goggles. Respiratory filter if airborne sprays or drops are present. (USCG, 1999)

DuPont Tychem® Suit Fabrics

[Fabric legend, testing details, and a caution from DuPont](#) ▶

Normalized Breakthrough Times (in Minutes)

Chemical	CAS Number	State	QS	QC	SL	C3	TF	TP	RC	TK	RF
Dimethyl sulfoxide	67-68-5	Liquid				>480	>480	>480	>480	>480	>480

> indicates greater than.

Special Warning from DuPont: Tychem® and Tyvek® fabrics should not be used around heat, flames, sparks or in potentially flammable or explosive environments. For more information, see [More Info...](#) ▶

(DuPont, 2022)

CAMEO Chemicals
record for DMSO –

Response
Recommendations

First Aid

EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital. (NTP, 1992)

Physical Properties

[What is this information?](#) ►

Chemical Formula: C2H6OS

Flash Point: 203°F (NTP, 1992)

Lower Explosive Limit (LEL): 2.6 % (NTP, 1992)

Upper Explosive Limit (UEL): 63 % (NTP, 1992)

Autoignition Temperature: 419°F (USCG, 1999)

Melting Point: 65.3°F (NTP, 1992)

Vapor Pressure: 0.42 mmHg at 68°F (NTP, 1992)

Vapor Density (Relative to Air): 2.71 (NTP, 1992)

Specific Gravity: 1.101 at 68°F (USCG, 1999)

CAMEO Chemicals record for DMSO –
Response Recommendations continued and Physical Properties

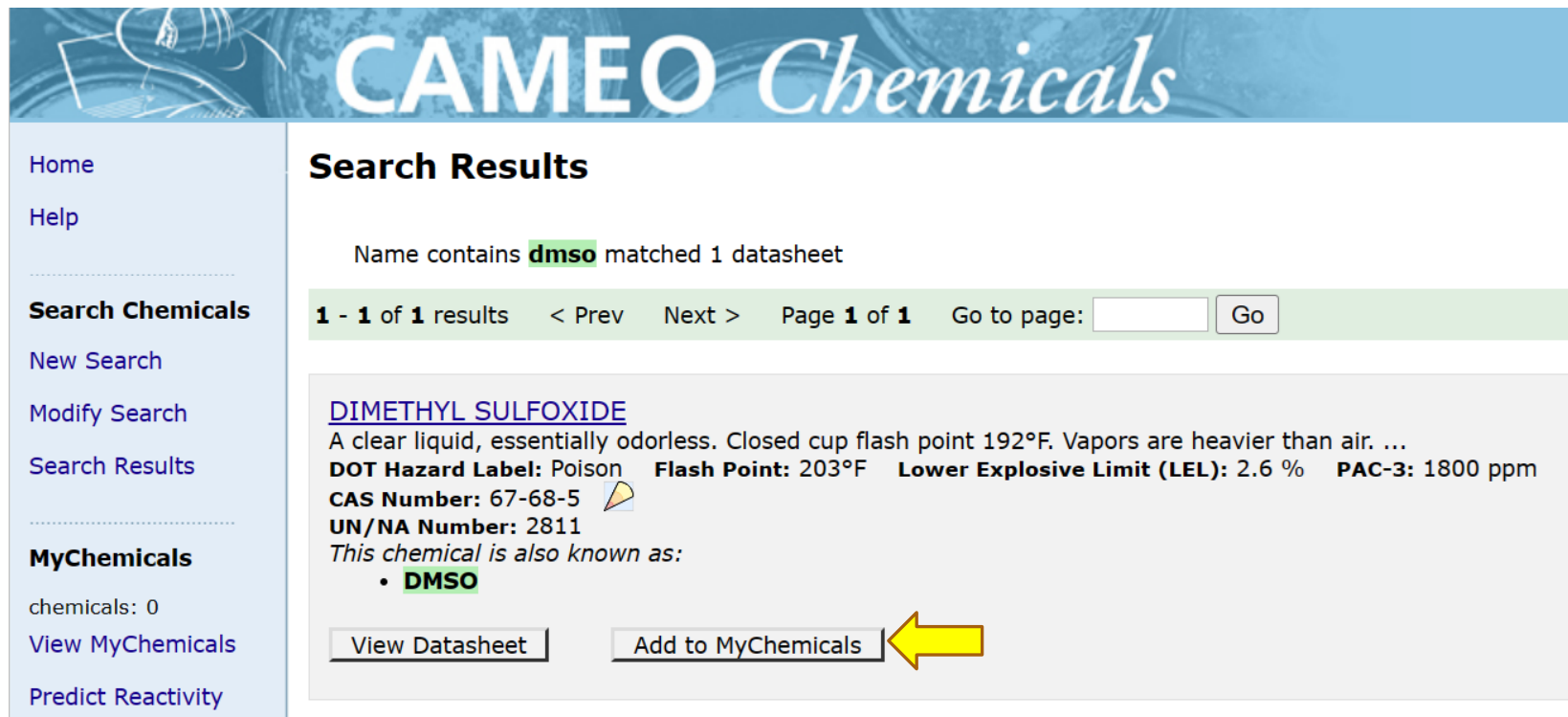
CAMEO Chemicals – Predict Reactivity

Step-by-step instructions:

1. Search substances one at a time.

From Search Results (or from Datasheet), press **Add to My Chemicals**.

Please note: **Advanced search** page lets you search fragments of chemical names, properties, etc.



The screenshot shows the CAMEO Chemicals website interface. The header features the logo and a navigation sidebar on the left with links: Home, Help, Search Chemicals, New Search, Modify Search, Search Results, MyChemicals, chemicals: 0, View MyChemicals, and Predict Reactivity. The main content area is titled 'Search Results' and displays a search for 'dmsO' which matched 1 datasheet. Below this, a green bar shows '1 - 1 of 1 results' with navigation controls. The search result for 'DIMETHYL SULFOXIDE' is shown, including its description, hazard labels (Poison), flash point (203°F), lower explosive limit (2.6%), and PAC-3 (1800 ppm). It also lists the CAS Number (67-68-5), UN/NA Number (2811), and notes that it is also known as 'DMSO'. At the bottom, there are two buttons: 'View Datasheet' and 'Add to MyChemicals', with a yellow arrow pointing to the latter.

CAMEO Chemicals

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Search Results

Name contains **dmsO** matched 1 datasheet

1 - 1 of 1 results < Prev Next > Page 1 of 1 Go to page: Go

DIMETHYL SULFOXIDE
A clear liquid, essentially odorless. Closed cup flash point 192°F. Vapors are heavier than air. ...
DOT Hazard Label: Poison **Flash Point:** 203°F **Lower Explosive Limit (LEL):** 2.6 % **PAC-3:** 1800 ppm
CAS Number: 67-68-5 
UN/NA Number: 2811
This chemical is also known as:
• **DMSO**

CAMEO Chemicals

Predict Reactivity

Step-by-step instructions continued:

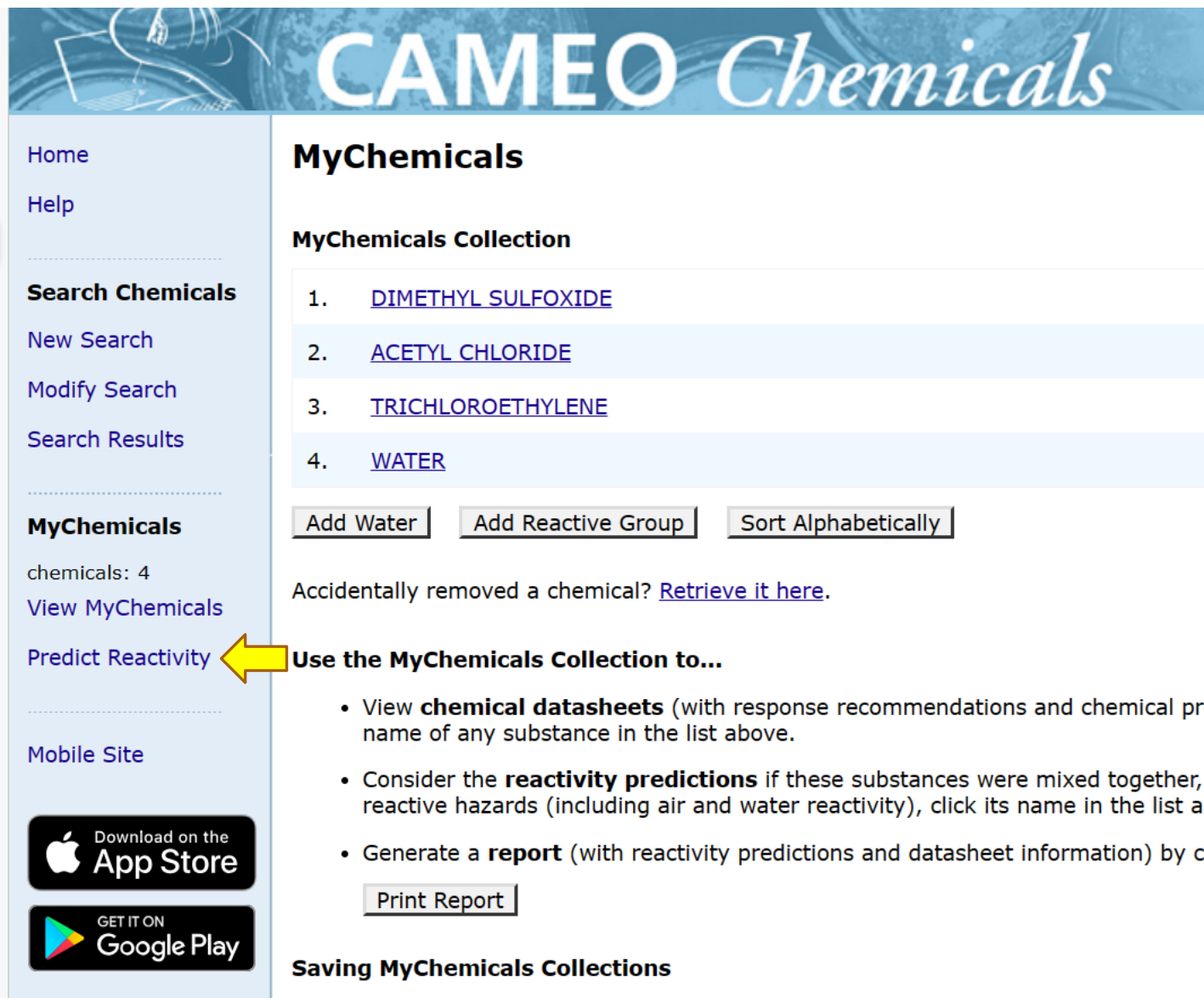
2. After adding substances to **MyChemicals**, click on **Predict Reactivity** on the left side.

Notes:

Reactivity Predictions are based on a PAIR or TWO substances.

Recommend adding no more than 20 compounds to **MyChemicals** to keep size of prediction table from becoming unwieldy.

See HELP for more details.



The screenshot shows the CAMEO Chemicals website. The header features the 'CAMEO Chemicals' logo. A left sidebar contains navigation links: Home, Help, Search Chemicals, New Search, Modify Search, Search Results, MyChemicals (with a sub-link 'View MyChemicals'), Predict Reactivity (highlighted with a yellow arrow), and Mobile Site. At the bottom of the sidebar are 'Download on the App Store' and 'GET IT ON Google Play' buttons. The main content area is titled 'MyChemicals' and shows a 'MyChemicals Collection' with a list of four chemicals: 1. DIMETHYL SULFOXIDE, 2. ACETYL CHLORIDE, 3. TRICHLOROETHYLENE, and 4. WATER. Below the list are buttons for 'Add Water', 'Add Reactive Group', and 'Sort Alphabetically'. A link 'Retrieve it here.' is provided for accidentally removed chemicals. A section titled 'Use the MyChemicals Collection to...' lists three actions: viewing chemical datasheets, considering reactivity predictions, and generating a report. A 'Print Report' button is located below the list. The bottom of the page has a section titled 'Saving MyChemicals Collections'.

CAMEO Chemicals

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chemicals: 4
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MyChemicals

MyChemicals Collection

1. [DIMETHYL SULFOXIDE](#)
2. [ACETYL CHLORIDE](#)
3. [TRICHLOROETHYLENE](#)
4. [WATER](#)

[Add Water](#) [Add Reactive Group](#) [Sort Alphabetically](#)

Accidentally removed a chemical? [Retrieve it here.](#)

Use the MyChemicals Collection to...

- View **chemical datasheets** (with response recommendations and chemical pro name of any substance in the list above).
- Consider the **reactivity predictions** if these substances were mixed together, l reactive hazards (including air and water reactivity), click its name in the list ab
- Generate a **report** (with reactivity predictions and datasheet information) by cli







[Print Report](#)

Saving MyChemicals Collections

Compatibility Chart

This chart provides an overview of the reactivity predictions. For more details, click on a cell or scroll down the page.

[How do I read this chart?](#) ►

	DIMETHYL SULFOXIDE		
ACETYL CHLORIDE	Caution  Generates heat Intense or explosive reaction	ACETYL CHLORIDE	
TRICHLOROETHYLENE	Compatible 	Compatible 	TRICHLOROETHYLENE
WATER	Compatible 	Incompatible  Corrosive Generates gas Generates heat Intense or explosive reaction Toxic	Caution  Corrosive Generates gas

CAMEO Chemicals – Predict Reactivity – Compatibility Chart