



Fluorophos Calibrator Set

Safety Data Sheet

according to US HazCom 2012
Issue date: 03 November 2023

SECTION 1: Identification

1.1. Identification

Product form : Mixtures
Trade name : Fluorophos Calibrator Set
Product code : FLA250

1.2. Recommended use and restrictions on use

Use of the substance/mixture : Laboratory use

1.3. Supplier

Advanced Instruments LLC
2 Technology Way
Norwood, Massachusetts 02062
1 (781) 320-9000
info@aicompanies.com

1.4. Emergency telephone number

Emergency number : 1 (877) 740-5015

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 1	Causes serious eye damage
Specific target organ toxicity (repeated exposure) Category 2	May cause damage to organs (liver, kidneys, blood, nervous system) through prolonged or repeated exposure

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)



Signal word (GHS US)

: Danger

Hazard statements (GHS US)

: Causes skin irritation
Causes serious eye damage
May cause damage to organs (liver, kidneys, blood, nervous system) through prolonged or repeated exposure

Precautionary statements (GHS US)

: Do not breathe mist, spray, vapors.
Wash hands thoroughly after handling.
Wear eye protection, protective gloves, protective clothing.
If on skin: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a poison center or doctor.
Get medical advice/attention if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

No additional information available

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
2,2'-iminodiethanol, diethanolamine	CAS-No.: 111-42-2	10 - 30	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT RE 2, H373

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if breathing difficulty persists.
First-aid measures after skin contact	: Rinse immediately with plenty of water for 15 minutes. Seek medical attention if ill effect or irritation develops.
First-aid measures after eye contact	: In case of eye contact, immediately rinse with clean water for 20-30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects	: May cause damage to organs (liver, kidneys, blood, nervous system) through prolonged or repeated exposure.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically. Symptoms may be delayed.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	: Use extinguishing media appropriate for surrounding fire.
Unsuitable extinguishing media	: None known.

5.2. Specific hazards arising from the chemical

Fire hazard	: The product is not flammable.
Explosion hazard	: No hazard identified.
Hazardous decomposition products in case of fire	: Thermal decomposition can lead to the release of irritating gases and vapors. Thermal decomposition may produce : Nitrogen oxides. Sodium oxides (NaOx). Carbon oxides (CO, CO2).

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5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Ventilate area. Avoid all unnecessary exposure.

6.1.1. For non-emergency personnel

- Protective equipment : Wear personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes. Do not breathe mist, spray, vapors.

6.1.2. For emergency responders

- Protective equipment : Wear recommended personal protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Ventilate area. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Collect spillage.
- Methods for cleaning up : Use neutralizing agent. Take up liquid spill into absorbent material. Gather the product and place it in a spare container that has been suitably labeled.
- Other information : Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For disposal of residues refer to section 13 : "Disposal considerations".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. Do not breathe mist, spray, vapors.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep only in the original container in a cool well ventilated place. Keep container closed when not in use.
- Incompatible materials : Strong acids and oxidants. Reducing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Fluorophos Calibrator Set (FLA250)
Fluorophos Daily Instrument Control (FLA280)

No additional information available

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2,2'-iminodiethanol, diethanolamine (111-42-2)

USA - ACGIH - Occupational Exposure Limits

Local name	Diethanolamine
ACGIH OEL TWA	1 mg/m ³ (IFV - Inhalable fraction and vapor)
Remark (ACGIH)	TLV® Basis: Liver & kidney dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2023

USA - NIOSH - Occupational Exposure Limits

NIOSH REL (TWA)	15 mg/m ³
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8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear suitable gloves resistant to chemical penetration. Please follow the instructions related to the permeability and the penetration time provided by the manufacturer

Eye protection:

Chemical goggles or safety glasses

Skin and body protection:

Long sleeved protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Appropriate dust or mist respirator should be used if airborne particles are generated when handling this material

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear.
Color	: Colorless
Odor	: characteristic
Odor threshold	: No data available
pH	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 176 °C (348.8 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available

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Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: 370 °C (698 °F)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Lower explosion limit: 2.1 Upper explosion limit: 10.6
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

VOC content	: 24.9 %
Percent Solids	: 75.1 %

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Strong acids and oxidants. Reducing agents.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Thermal decomposition may produce : Nitrogen oxides. Sodium oxides (NaOx). Carbon oxides (CO, CO2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (dermal)	: Not classified (Based on available data, the classification criteria are not met)
Acute toxicity (inhalation)	: Not classified (Based on available data, the classification criteria are not met)

2,2'-iminodiethanol, diethanolamine (111-42-2)

LD50 oral rat	780 mg/kg
LD50 dermal rabbit	11.9 ml/kg

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified (Based on available data, the classification criteria are not met)
Germ cell mutagenicity	: Not classified (Based on available data, the classification criteria are not met)
Carcinogenicity	: Not classified (Based on available data, the classification criteria are not met) Not classifiable as a human carcinogen

2,2'-iminodiethanol, diethanolamine (111-42-2)

IARC group	2B - Possibly carcinogenic to humans
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Reproductive toxicity	: Not classified (Based on available data, the classification criteria are not met)
STOT-single exposure	: Not classified (Based on available data, the classification criteria are not met)
STOT-repeated exposure	: May cause damage to organs (liver, kidneys, blood, nervous system) through prolonged or repeated exposure.

2,2'-iminodiethanol, diethanolamine (111-42-2)

STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified (Based on available data, the classification criteria are not met)
Viscosity, kinematic	: No data available
Symptoms/effects	: May cause damage to organs (liver, kidneys, blood, nervous system) through prolonged or repeated exposure.
Symptoms/effects after skin contact	: Irritation.
Symptoms/effects after eye contact	: Serious damage to eyes.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: This material has not been tested for environmental effects.
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2,2'-iminodiethanol, diethanolamine (111-42-2)

LC50 - Fish [1]	4460 – 4980 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	55 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 - Fish [2]	1200 – 1580 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 72h - Algae [1]	7.8 mg/l (Species: Desmodesmus subspicatus)
EC50 96h - Algae [1]	2.1 – 2.3 mg/l (Species: Pseudokirchneriella subcapitata)

12.2. Persistence and degradability

Fluorophos Calibrator Set (FLA250) Fluorophos Daily Instrument Control (FLA280)

Persistence and degradability	Not established.
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12.3. Bioaccumulative potential

Fluorophos Calibrator Set (FLA250) Fluorophos Daily Instrument Control (FLA280)

Bioaccumulative potential	Not established.
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2,2'-iminodiethanol, diethanolamine (111-42-2)

BCF - Fish [1]	(no significant bioconcentration)
Partition coefficient n-octanol/water (Log Pow)	-2.46 (at 25 °C (at pH 6.8-7.3))

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information	: Avoid release to the environment.
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SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
Not regulated for transport			
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available			

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

[2,2'-Bibenzothiazol]-6-ol	CAS-No. 129058-47-5	< 0.1%
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Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

sodium azide	CAS-No. 26628-22-8	< 0.1%
2,2'-iminodiethanol, diethanolamine	CAS-No. 111-42-2	10 - 30%

sodium azide (26628-22-8)

CERCLA RQ	1000 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb
Section 302 EPCRA Reportable Quantity (RQ)	1000 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	500 lb (this material is a reactive solid, the TPQ does not default to 10000 pounds for non-powder, non-molten, non-solution form)

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2,2'-iminodiethanol, diethanolamine (111-42-2)

Listed on EPA Hazardous Air Pollutant (HAPS)

CERCLA RQ

100 lb

15.2. International regulations

Water (7732-18-5)

Listed on the NCI (Vietnam - National Chemical Inventory)

Listed on TECI (Thailand Existing Chemicals Inventory)

sodium azide (26628-22-8)

Listed on the NCI (Vietnam - National Chemical Inventory)


2,2'-iminodiethanol, diethanolamine (111-42-2)

Listed on IARC (International Agency for Research on Cancer)

Listed on the NCI (Vietnam - National Chemical Inventory)

Listed on TECI (Thailand Existing Chemicals Inventory)

15.3. US State regulations

 **WARNING:** This product can expose you to Diethanolamine, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Component	State or local regulations
sodium azide(26628-22-8)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Minnesota - Hazardous Substance List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
2,2'-iminodiethanol, diethanolamine(111-42-2)	U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List; U.S. - Minnesota - Hazardous Substance List; U.S. - Massachusetts - Right To Know List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

SECTION 16: Other information

according to US HazCom 2012

Revision date : 23 June 2023

Other information : None.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.