

# SAFETY DATA SHEET



## Transfluor Evaluation Kit

### Section 1. Identification

**Product identifier** : Transfluor Evaluation Kit  
**Other means of identification** : Not available.  
**Product type** : Liquid.  
**Product part number** : R8177/R8178  
**Kit name** : U2OS  $\beta$ -arrestin2-RrGFP Cells  
**Kit part number** : TR-U2OS-rBA2GFP

#### Relevant identified uses of the substance or mixture and uses advised against

**Product use** : For R&D use only.  
**Area of application** : Professional applications.

**Manufacturer** : MOLECULAR DEVICES, LLC  
3860 N First Street  
San Jose, CA 95134  
USA

**e-mail address of person responsible for this SDS** : msdsinquiry@moldev.com

**Emergency telephone number (with hours of operation)** : CHEMTREC (24 hours): 1-800-424-9300 (USA/Canada),  
+1 703-527-3887 (Outside USA/Canada)

### Section 2. Hazard identification

**Classification of the substance or mixture** :  H320 EYE IRRITATION - Category 2B

#### GHS label elements

**Signal word** : Warning  
**Hazard statements** : H320 - Causes eye irritation.

#### Precautionary statements

**Prevention** :  P264 - Wash thoroughly after handling.  
**Response** : P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical advice or attention.

**Storage** : Not applicable.

**Disposal** : Not applicable.

**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

| Ingredient name    | Other names | % (w/w)   | Identifiers  |
|--------------------|-------------|-----------|--------------|
| Dimethyl sulfoxide | -           | ≥10 - ≤30 | CAS: 67-68-5 |

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First-aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. If irritation persists, get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
 irritation  
 watering  
 redness

## Section 4. First-aid measures

- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

## Section 6. Accidental release measures

### Methods and materials for containment and cleaning up

- Small spill** :  Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** :  Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name                                                                                        | Exposure limits                                                   |
|--------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
|  dimethyl sulfoxide | <b>OARS WEEL (United States, 9/2024)</b><br>TWA 8 hours: 250 ppm. |

#### Biological exposure indices

None known.

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

## Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### Appearance

- Physical state** : Liquid. [Frozen]
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- Melting point and freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : Not available.
- Evaporation rate** : Not available.
- Flammability** : Not available.
- Lower and upper explosion limit or lower and upper flammability limit** : Not available.
- Flash point** :

| Ingredient name    | Closed cup |       |           | Open cup |    |        |
|--------------------|------------|-------|-----------|----------|----|--------|
|                    | °C         | °F    | Method    | °C       | °F | Method |
| Dimethyl sulfoxide | 87         | 188.6 | ASTM D 93 |          |    |        |

## Section 9. Physical and chemical properties

|                                  |   |                        |            |              |               |
|----------------------------------|---|------------------------|------------|--------------|---------------|
| <b>Auto-ignition temperature</b> | : | <b>Ingredient name</b> | <b>°C</b>  | <b>°F</b>    | <b>Method</b> |
|                                  |   | Dimethyl sulfoxide     | 300 to 302 | 572 to 575.6 |               |

**Decomposition temperature** : Not available.

**pH** : Not available.

**Viscosity** : Dynamic (room temperature): Not available.  
Kinematic (room temperature): Not available.  
Kinematic (40°C (104°F)): Not available.

**Solubility** : Not available.

**Partition coefficient — n-octanol/water (logarithmic value)** : Not applicable.

|                       |   |                        |                               |            |               |                               |            |               |
|-----------------------|---|------------------------|-------------------------------|------------|---------------|-------------------------------|------------|---------------|
| <b>Vapor pressure</b> | : |                        | <b>Vapor Pressure at 20°C</b> |            |               | <b>Vapor pressure at 50°C</b> |            |               |
|                       |   | <b>Ingredient name</b> | <b>mm Hg</b>                  | <b>kPa</b> | <b>Method</b> | <b>mm Hg</b>                  | <b>kPa</b> | <b>Method</b> |
|                       |   | Dimethyl sulfoxide     | 0.42                          | 0.056      | EU A.4        |                               |            |               |

**Relative density** : Not available.

**Relative vapor density** : Not available.

### Particle characteristics

**Median particle size** : Not applicable.

### Other information

**Physical/chemical properties comments** : No additional information.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerization will not occur.

**Conditions to avoid** : No specific data.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

##### Product/ingredient name

dimethyl sulfoxide

##### Result

**Rat - Oral - LD50**

14500 mg/kg

**Rat - Dermal - LD50**

40000 mg/kg

Toxic effects: Eye - Hemorrhage Eye -  
Conjunctive irritation

##### Conclusion/Summary [Product]

: Not available.

#### Skin corrosion/irritation

##### Product/ingredient name

dimethyl sulfoxide

##### Result

**Rabbit - Skin - Mild irritant**

Duration of treatment/exposure: 24  
hours

Amount/concentration applied: 500 mg

**Rabbit - Skin - Mild irritant**

Duration of treatment/exposure: 24  
hours

Amount/concentration applied: 10 mg

**Rabbit - Skin - Mild irritant**

Amount/concentration applied: 100 mg

##### Conclusion/Summary [Product]

: Not available.

#### Serious eye damage/eye irritation

##### Product/ingredient name

dimethyl sulfoxide

##### Result

**Rabbit - Eyes - Mild irritant**

Duration of treatment/exposure: 24  
hours

Amount/concentration applied: 500 mg

**Rabbit - Eyes - Mild irritant**

Amount/concentration applied: 100 mg

**Rabbit - Eyes - Mild irritant**

Amount/concentration applied: 0.1 MI

##### Conclusion/Summary [Product]

: Not available.

#### Respiratory corrosion/irritation

##### Conclusion/Summary [Product]

: Not available.

#### Respiratory or skin sensitization

##### Skin

##### Conclusion/Summary [Product]

: Not available.

##### Respiratory

##### Conclusion/Summary [Product]

: Not available.

## Section 11. Toxicological information

### Germ cell mutagenicity

**Conclusion/Summary [Product]** : Not available.

### Carcinogenicity

**Conclusion/Summary [Product]** : Not available.

### Reproductive toxicity

**Conclusion/Summary [Product]** : Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

### Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

### Potential acute health effects

**Eye contact** : Causes eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : Adverse symptoms may include the following:  
 irritation  
 watering  
 redness  
**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### **Short term exposure**

**Potential immediate effects** : Not available.  
**Potential delayed effects** : Not available.

## Section 11. Toxicological information

### Long term exposure

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

**Conclusion/Summary [Product]** : Not available.

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| dimethyl sulfoxide      | 14500        | 40000          | N/A                      | N/A                        | N/A                                 |

## Section 12. Ecological information

### Toxicity

#### Product/ingredient name

dimethyl sulfoxide

#### Result

##### Acute - LC50 - Fresh water

Effect: Mortality

Fish - Fathead minnow - *Pimephales promelas*

Age: 31 days; Size: 15.8 mm; Weight: 0.062 g

34 g/l [96 hours]

##### Acute - LC50 - Fresh water

Effect: Mortality

Daphnia - Water flea - *Daphnia magna* - Neonate

Age: <24 hours

2.5 pph [48 hours]

##### Acute - EC50 - Marine water

Effect: Population  
OECD

Algae - Diatom - *Nitzschia pungens* 18.299 mg/l [96 hours]

##### Chronic - NOEC - Marine water

Effect: Population  
OECD

Algae - Diatom - *Nitzschia pungens* 3323 µg/l [96 hours]

##### Chronic - NOEC - Fresh water

Effect: Reproduction  
OECD

Daphnia - Water flea - *Daphnia magna* - Juvenile (Fledgling, Hatchling, Weanling)

Age: 6 days

## Section 12. Ecological information

100 µl/l [21 days]

**Conclusion/Summary [Product]** : Not available.

### Persistence and degradability

#### Product/ingredient name

#### Result

dimethyl sulfoxide

**Aerobic**  
31% [28 days] - Not readily

OECD [Ready Biodegradability -  
Closed Bottle Test]

**Conclusion/Summary [Product]** : Not available.

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| dimethyl sulfoxide      | -                 | -          | Not readily      |

### Bioaccumulative potential

| Product/ingredient name | LogP <sub>ow</sub> | BCF  | Potential |
|-------------------------|--------------------|------|-----------|
| dimethyl sulfoxide      | -1.35              | 3.16 | Low       |

### Mobility in soil

#### Soil/Water partition coefficient

: Not available.

### Other adverse effects

No known significant effects or critical hazards.

## Section 13. Disposal considerations

### Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

## Section 14. Transport information

|                                   | <b>TDG Classification</b> | <b>DOT Classification</b> | <b>IMDG</b>    | <b>IATA</b>    |
|-----------------------------------|---------------------------|---------------------------|----------------|----------------|
| <b>UN number</b>                  | Not regulated.            | Not regulated.            | Not regulated. | Not regulated. |
| <b>UN proper shipping name</b>    | -                         | -                         | -              | -              |
| <b>Transport hazard class(es)</b> | -                         | -                         | -              | -              |
| <b>Packing group</b>              | -                         | -                         | -              | -              |
| <b>Environmental hazards</b>      | No.                       | No.                       | No.            | No.            |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

### Canadian lists

**Canadian NPRI** : None of the components are listed.

**CEPA Toxic substances** : None of the components are listed.

**Canada inventory** : Not determined.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Other information

### History

**Date of issue/Date of revision** : 23/05/2025

**Date of previous issue** : 16/12/2020

**Version** : 3

**Prepared by** : Sphera Solutions

## Section 16. Other information

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 HPR = Hazardous Products Regulations  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 N/A = Not available  
 UN = United Nations

### Procedure used to derive the classification

| Classification               | Justification      |
|------------------------------|--------------------|
| EYE IRRITATION - Category 2B | Calculation method |

### References

: HPR = Hazardous Products Regulations

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.