

# SAFETY DATA SHEET

## 1. PRODUCT AND COMPANY IDENTIFICATION

### Identification

Product Name Dimethyl sulfoxide  
Product Number Q13003

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

Identified uses: Laboratory chemicals, Manufacture of substances

### Manufacturer

Aligned Genetics, Inc.  
FL 3, 28 Simindaero 327 beon-gil  
Dongan-gu, Anyang-si  
Gyeonggi-do 14055  
South Korea  
Telephone: +82-31-478-4185  
Fax: +82-31-360-4277  
E-mail: sales@logosbio.com

### Supplier

Aligned Genetics, Inc..  
FL 3, 28 Simindaero 327 beon-gil  
Dongan-gu, Anyang-si  
Gyeonggi-do 14055  
South Korea  
Telephone: +82-31-478-4185  
Fax: +82-31-360-4277  
E-mail: sales@logosbio.com

**Emergency telephone number** +82 31 478 4185

**For research use only. Not intended for human or animal diagnostic or therapeutic use.**

## 2. HAZARDS IDENTIFICATION

### [GHS classification]

#### Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008  
Not hazardous

### Label elements

Labeling according to Regulation (EC) No 1272/2008

Hazard pictograms None

Signal word Not hazardous

Hazard statements  
Not hazardous

Precautionary statements  
Not hazardous

**Other hazards**

None

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Mixtures**

Component	Synonyms	Formula	CAS No.	Weight %
DMSO	Methyl sulfoxide	C <sub>2</sub> H <sub>6</sub> OS	67-68-5	90-100%

### 4. FIRST AID MEASURES

**Description of first aid measures**

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance.
If inhaled	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact	Wash off with soap and plenty of water. Consult a physician.
In case of eye contact	Flush eyes with water as a precaution.
If swallowed	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**Most important symptoms and effects, both acute and delayed**

no data available.

**Indication of any immediate medical attention and special treatment needed**

no data available.

### 5. FIREFIGHTING MEASURES

**Extinguishing media**

**Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**Special hazards arising from the substances or mixture**

Carbon oxides, Sulphur oxides

**Advice of fire-fighters**

**Protective equipment**

Wear self-contained breathing apparatus for firefighting if necessary.

### **Further information**

Use water spray to cool unopened containers.

## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions, protective equipment and emergency procedures**

Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

### **Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### **Methods and materials for containment and cleaning up**

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in a container for disposal according to applicable laws. Keep in suitable, closed containers for disposal.

### **Reference to other sections**

For disposal see section 13.

## **7. HANDLING AND STORAGE**

### **Precautions for safe handling**

Avoid breathing vapors, mist or gas. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### **Conditions for safe storage, including any incompatibilities**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store under inert gas. Hygroscopic.

### **Specific end use(s)**

no data available.

## **8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

### **Control parameters**

Components with workplace control parameters

### **Exposure controls**

#### **Appropriate engineering controls**

Handle in accordance with general industrial hygiene and safety practice. Wash hands before breaks and at the end of a workday.

#### **Personal protective equipment**

<b>Eye/face protection</b>	Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
<b>Skin protection</b>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash

	and dry hands.
<b>Body protection</b>	Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substances at the specific workplace.
<b>Respiratory protection</b>	Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
<b>Control of Environmental exposure</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Form: liquid
<b>Odour</b>	No data available
<b>Odour Threshold</b>	No data available
<b>pH</b>	No data available
<b>Melting point</b>	16-19°C
<b>Initial boiling point and boiling range</b>	189°C
<b>Flash point</b>	87 °C - closed cup
<b>Evaporation rate</b>	No data available
<b>Flammability (solid, gas)</b>	No data available
<b>Upper/lower flammability or explosive limits</b>	Upper explosion limit: 42 %(V) Lower explosion limit: 3.5 %(V)
<b>Vapour pressure</b>	0,55 hPa at 20 °C
<b>Vapour density</b>	2,70 - (Air = 1.0)
<b>Relative density</b>	1.1 g/mL
<b>Water Solubility</b>	Completely miscible
<b>Partition coefficient: n-octanol / water</b>	log Pow: -2,03
<b>Auto-ignition temperature</b>	No data available
<b>Decomposition temperature</b>	No data available
<b>Viscosity</b>	No data available
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No data available

### Other safety information

Relative vapour density 2,70 - (Air = 1.0)

## 10. STABILITY AND REACTIVITY

### **Reactivity**

No data available.

### **Chemical stability**

Stable under recommended storage conditions.

### **Possibility of hazardous reactions**

No data available

### **Conditions to avoid**

Heat, flames and sparks.

### **Incompatible materials**

Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

### **Hazardous decomposition products**

Other decomposition products - No data available

## 11. TOXICOLOGICAL INFORMATION

### **Acute toxicity**

LD50 Oral - Rat - 14.500 mg/kg

LC50 Inhalation - Rat - 4 h - 40250 ppm

LD50 Dermal - Rabbit - > 5.000 mg/kg

### **Skin corrosion/irritation**

Mild skin irritation

### **Serious eye damage/eye irritation**

No data available

### **Respiratory or skin sensitization**

No data available

### **Germ cell mutagenicity**

Mouse

lymphocyte

Cytogenetic analysis

Mouse

lymphocyte

Mutation in mammalian somatic cells

Rat

Cytogenetic analysis

Mouse

DNA damage

### **Carcinogenicity**

Carcinogenicity - Rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - Mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages:  
Other: Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **Reproductive toxicity**

Reproductive toxicity - Rat - Intraperitoneal  
Effects on Fertility: Abortion.

Reproductive toxicity - Rat - Intraperitoneal  
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - Rat - Subcutaneous  
Sigma-Aldrich - 472301 Page 6 of 8  
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).

Reproductive toxicity - Mouse - Oral  
Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - Mouse - Intraperitoneal  
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

#### **Specific target organ toxicity – single exposure**

No data available

#### **Specific target organ toxicity – repeated exposure**

No data available

#### **Aspiration hazard**

No data available

#### **Additional Information**

RTECS: PV6210000

Exposure to large amounts can cause: redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness

## **12. ECOLOGICAL INFORMATION**

#### **Toxicity**

Toxicity to fish	LC50 - <i>Pimephales promelas</i> (fathead minnow) - 34.000 mg/l - 96 h LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) - 35.000 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - <i>Daphnia magna</i> (Water flea) - 24.600 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	EC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - 17.000 mg/l - 72 h (OECD Test Guideline 201)

#### **Persistence and degradability**

Biodegradability	Result: 31 % - According to the results of tests of biodegradability, this product is not readily biodegradable. (OECD Test Guideline 301D)
------------------	--

#### **Bioaccumulative potential**

No data available

#### **Mobility in soil**

No data available

#### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

#### **Endocrine disrupting properties**

no data available

#### **Other adverse effects**

No data available

### **13. DISPOSAL CONSIDERATIONS**

#### **Waste treatment methods**

##### **Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

##### **Contaminated packaging**

Dispose of as unused product.

### **14. TRANSPORT INFORMATION**

<b>UN number</b>	ADR/RID: -	IMDG: -	IATA: -
<b>UN proper shipping name</b>	ADR/RID: Not dangerous goods	IMDG: Not dangerous goods	IATA: Not dangerous goods
<b>Transport hazard class(es)</b>	ADR/RID: -	IMDG: -	IATA: -
<b>Packaging group</b>	ADR/RID: -	IMDG: -	IATA: -
<b>Environmental hazards</b>	ADR/RID: no	IMDG Marine pollutant: no	IATA: no
<b>Special precautions for user</b>	No data available		

<b>Maritime transport in bulk according to IMO instruments</b>		IMDG: -	
--	--	---------	--

## 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

### Safety, health and environmental regulations/legislation specific for the substance or mixture

International Chemical Weapons Convention (CWC) Schedules of Toxic Chemicals and Precursors	Neither banned nor restricted
Restrictions on the marketing and use of certain dangerous substances and preparations	Neither banned nor restricted
Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	Neither banned nor restricted
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

### Chemical safety assessment

For this product, a chemical safety assessment was not carried out

## 16. OTHER INFORMATION

### Further information

Copyright 2020. Aligned Genetics, Inc. The license is granted to make unlimited paper copies for internal use only.

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and applies to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. . Aligned Genetics, Inc. and its Affiliates shall not be held liable for any damage resulting from handling or contact with the above product. See the reverse side of the invoice or packing slip for additional terms and conditions of sale.

**End of Safety Data Sheet**