



## SAFETY DATA SHEET

### 1. Identification

<b>Product identifier</b>	Anti-NRF2 pAb
<b>Other means of identification</b>	
<b>Product code</b>	PM069
<b>Recommended use</b>	Research use only.
<b>Recommended restrictions</b>	None known.
<b>Manufacturer / Importer / Supplier / Distributor information</b>	
<b>Manufacturer and Supplier (Asia)</b>	Medical & Biological Laboratories (MBL) Co., Ltd. 4-5-3 Sakae, Naka-ku, Nagoya, Aichi 460-0008, Japan
<b>Telephone number</b>	+81-52-238-1901 (Monday to Friday, 9 AM to 5 PM JST)
<b>Fax</b>	+81-52-238-1440
<b>E-mail</b>	sds-support@mbl.co.jp
<b>URL</b>	<a href="http://www.mbl.co.jp/e/index.html">http://www.mbl.co.jp/e/index.html</a>
<b>Contact person</b>	SDS Support
<b>Supplier</b>	MBL International Corporation 15A Constitution Way, Woburn, MA 01801, USA
<b>Telephone number</b>	+1-800-200-5459, option 3
<b>Fax</b>	+1-781-939-6963
<b>E-mail</b>	tech@mblintl.com
<b>URL</b>	<a href="http://www.mblintl.com/">http://www.mblintl.com/</a>
<b>Contact person</b>	Technical Service

### 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>OSHA hazard(s)</b>	Not classified.
<b>Label elements</b>	
<b>Hazard symbol</b>	None.
<b>Signal word</b>	None.
<b>Hazard statement</b>	None.
<b>Precautionary statement</b>	
<b>Prevention</b>	Observe good industrial hygiene practices.
<b>Response</b>	Wash thoroughly after handling.
<b>Storage</b>	Store away from incompatible materials.
<b>Disposal</b>	Dispose of waste and residues in accordance with local authority requirements.
<b>Hazard(s) not otherwise classified (HNOC)</b>	None.

### 3. Composition/Information on ingredients

#### Mixtures

Chemical name	CAS number	%
Glycerol (Glycerin)	56-81-5	50 - 60

**Composition comments** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First aid measures

<b>Inhalation</b>	Move to fresh air. Get medical attention if discomfort develops or persists.
<b>Skin contact</b>	Remove contaminated clothing. Wash with soap and water. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

<b>Eye contact</b>	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation develops or persists.
<b>Ingestion</b>	Drink plenty of water. Seek medical advice.
<b>Most important symptoms/ effects, acute and delayed</b>	Irritation of eyes and mucous membranes. Mild skin irritation.
<b>Indication of immediate medical attention and special treatment needed</b>	Treat symptomatically.
<b>General information</b>	Get medical attention if any discomfort develops.

**5. Fire fighting measures**

<b>Suitable extinguishing media</b>	Water. Foam. Dry powder. Carbon dioxide (CO2).
<b>Unsuitable extinguishing media</b>	None known.
<b>Specific hazards arising from the chemical</b>	Fire or high temperatures create: Carbon oxides.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus, operated in positive pressure mode and full protective clothing must be worn in case of fire.
<b>Fire-fighting equipment/instructions</b>	Move containers from fire area if you can do that without risk. Use water spray to cool unopened containers. Prevent entry to sewers and public waters.

**6. Accidental release measures**

<b>Personal precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation. Avoid inhalation of mist and contact with skin and eyes. For personal protection, see Section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Dike far ahead of liquid spill for later disposal. Small Spills: Absorb spillage with suitable absorbent material. Clean contaminated surface thoroughly. After removal, flush contaminated area thoroughly with water. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so.

**7. Handling and storage**

<b>Precautions for safe handling</b>	Provide adequate ventilation. Use work methods which minimize production of vapors and mists. Avoid inhalation of mist and contact with skin and eyes. Wash hands after handling. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Keep container tightly closed. Store away from incompatible materials.

**8. Exposure controls/personal protection**

**Occupational exposure limits**

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

**US. ACGIH Threshold Limit Values**

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m3	Mist.

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Exposure guidelines</b>	No exposure standards allocated.
<b>Appropriate engineering controls</b>	Provide adequate ventilation and minimize the risk of inhalation of vapors and mists.
<b>Individual protection measures, such as personal protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses.
<b>Skin protection</b>	

<b>Hand protection</b>	Wear protective gloves. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
<b>Other</b>	Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear protective gloves. Nitrile gloves are recommended, but be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.
<b>Respiratory protection</b>	In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment with combination filter (gas filter/dust filter). Seek advice from local supervisor.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants.

## 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	Liquid.
<b>Form</b>	Viscous liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Neutral.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	Soluble in water.
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Stable at normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous reactions do not occur.
<b>Conditions to avoid</b>	Strong heating. Contact with incompatible materials.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	None known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	Ingestion may cause irritation and malaise.
<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

<b>Skin contact</b>	May cause skin irritation. Causes skin irritation.
<b>Eye contact</b>	May cause eye irritation on direct contact. Causes eye irritation.
<b>Symptoms related to the physical, chemical and toxicological characteristics</b>	Irritation of eyes and mucous membranes. Mild skin irritation.
<b>Information on toxicological effects</b>	
<b>Acute toxicity</b>	Ingestion may cause irritation and malaise.
<b>Skin corrosion/irritation</b>	May cause skin irritation.
<b>Serious eye damage/eye irritation</b>	May cause eye irritation on direct contact.
<b>Respiratory sensitization</b>	Not classified.
<b>Skin sensitization</b>	Not a skin sensitizer.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	IARC not listed.
<b>Reproductive toxicity</b>	Not classified.
<b>Specific target organ toxicity - single exposure</b>	Knowledge about health hazard is incomplete.
<b>Specific target organ toxicity - repeated exposure</b>	Knowledge about health hazard is incomplete.
<b>Aspiration hazard</b>	Not classified.

**12. Ecological information**

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills have a harmful or damaging effect on the environment.	
<b>Persistence and degradability</b>	The product is biodegradable.	
<b>Bioaccumulative potential</b>	The product is not bioaccumulating.	
<b>Partition coefficient <i>n</i>-octanol / water (log <i>Kow</i>)</b>	Glycerol (CAS 56-81-5)	-1.76
<b>Mobility in soil</b>	Expected to be highly mobile in soil.	
<b>Mobility in general</b>	The product is water soluble and may spread in water systems.	
<b>Other adverse effects</b>	No data available.	

**13. Disposal considerations**

<b>Disposal instructions</b>	Dispose of in accordance with all applicable regulations. Do not discharge into drains, water courses or onto the ground.	
<b>Local disposal regulations</b>	Dispose of in accordance with local regulations.	
<b>Hazardous waste code</b>	Not regulated.	
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.	
<b>Contaminated packaging</b>	Dispose of in same manner as unused product.	

**14. Transport information**

<b>DOT</b>	Not regulated as a dangerous good.
<b>IATA</b>	Not regulated as a dangerous good.
<b>IMDG</b>	Not regulated as a dangerous good.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

**15. Regulatory information**

<b>US federal regulations</b>	This product is hazardous according to OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.	
<b>TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)</b>	Not regulated.	
<b>OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>	Not regulated.	
<b>CERCLA Hazardous Substance List (40 CFR 302.4)</b>	Not listed.	
<b>Superfund Amendments and Reauthorization Act of 1986 (SARA)</b>		

**Hazard categories**

Immediate Hazard - Yes  
 Delayed Hazard - No  
 Fire Hazard - No  
 Pressure Hazard - No  
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance  
 SARA 311/312 Hazardous chemical

No  
 Yes

**Other federal regulations**

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List  
 Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)  
 Safe Drinking Water Act (SDWA)  
 Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number  
 Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))  
 DEA Exempt Chemical Mixtures Code Number  
 Food and Drug Administration (FDA)

Not regulated.  
 Not regulated.  
 Not regulated.  
 Not listed.  
 Not regulated.  
 Not regulated.  
 Not regulated.

**US state regulations**

This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Massachusetts RTK - Substance List  
 New Jersey Worker and Community Right-to-Know Act  
 Pennsylvania RTK - Hazardous Substances  
 Rhode Island RTK  
 California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT)

Glycerol (CAS 56-81-5)  
 Not regulated.  
 Glycerol (CAS 56-81-5)  
 Glycerol (CAS 56-81-5)  
 Not listed.

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	EC Inventory	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).  
 A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

**16. Other information**

Issue date	09/28/2011
Revision date	09/30/2016
Version	10
Further information	Not available.
References	IUCLID
Disclaimer	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.