



## Material Safety Data Sheet

**MSDS/SDS Number:** 00000265MSDS  
**Latest Revision Date:** July 27, 2009  
**Revision:** A

### SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY/UNDERTAKING

**Product Name:** ANTI-BMAL1  
**Catalogue Number(s):** AB2298  
**Chemical Name:** Polypeptide in Trometamol (Tris), Glycine, Sodium Chloride, and Sodium Azide.  
**Synonyms:** None  
**Intended Product Use:** Cellular Research

**Manufacturer/Distributor:** Millipore Corporation (Corporate Headquarters)      Millipore S.A.S. (European Headquarters)  
**Postal Address:** 290 Concord Road Billerica MA, USA      Boite Postale 116 67124 Molsheim Cedex, France  
**Telephone Number:** +1-978-715-1335      +33(0)3 90 46 90 00  
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**CHEMTREC Emergency Telephone Number:** International +1-703-527-3887 (collect)  
North America 1-800-424-9300 (toll free)

### SECTION 2 HAZARDS IDENTIFICATION

**GHS Hazard Class:** Eye Irritation: Category 2B  
Skin Irritation: Category 3  
**Signal Word and Hazard Statement:** Warning: Causes eye irritation  
Warning: Causes mild skin irritation

**EU Hazard Symbol Pictogram:**



Xi (R36/38)

### SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Identification of Dangerous Components:** This product contains the substances listed below, which are defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters*†	R Phrases**†
Trometamol (Tris):	201-064-4	77-86-1	< 2 %	N/A	N/A
Glycine:	200-272-2	56-40-6	< 2 %	N/A	N/A
Sodium Chloride:	231-598-3	7647-14-5	< 1 %	N/A	N/A
					R28
Sodium Azide:	247-852-1	26628-22-8	< 0.1 %	T+	R32
				N	R50/53

**Identification of Components Not Classified as Dangerous:** This product contains the substances listed below, which are not defined as dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard 29 CFR 1910.1200.

Non-Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters *	R Phrases**
Water:	231-791-2	7732-18-5	> 95 %	N/A	N/A
Polypeptide:	N/A	N/A	Proprietary	N/A	N/A

\* Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **Xi** = Irritant, **E** = Explosive, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment, **O** = Oxidising.

\*\* The full text of each R phrase is listed in Section 2.

† Symbols letters and R Phrases are assigned to each dangerous component for the highest concentration range as defined in 67/548/EEC and 1999/45/EC.

### SECTION 4 FIRST AID MEASURES

	Treatment Measures:	Symptoms of Exposure:
<b>Contact with Eyes:</b>	If the product contacts the eyes, promptly wash (irrigate) the eyes with large amounts of tepid water for at least 15 minutes, occasionally lifting the lower and upper lids. Seek medical attention immediately.	Possible eye irritation
<b>Ingestion:</b>	Seek medical attention immediately. Never give an unconscious person anything by mouth.	Possible gastrointestinal irritation causing nausea and vomiting.
<b>Inhalation:</b>	If a person inhales large amounts of the product move the exposed person to fresh air at once. If breathing is difficult or stops seek immediate medical attention.	Possible respiratory tract and mucous membrane irritation.

**Skin Contact:** If the product contacts the skin, immediately flush the contaminated skin with mild soap and water. If this chemical penetrates clothing immediately remove the clothing and flush the skin with water. Seek medical attention immediately. Possible skin irritation.

## SECTION 5 FIRE FIGHTING MEASURES

**Suitable Extinguishing Media:** Use extinguishing media appropriate for the surrounding fire. This product is compatible with commercially available extinguishing media.

**Special Exposure Hazards:** None

**Special Protective Equipment for Firefighters:** This product does not require the use of any additional fire fighting equipment beyond what is appropriate to the surrounding fire.

## SECTION 6 ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Wear chemical resistant boots, clothing, eye protection, and gloves to prevent skin contact (See Section 8).

**Small Spills:** Identify the spilled material(s). Barricade the spill area and notify others in the surrounding areas. Control all sources of ignition if the substance is flammable. Don the appropriate personal protective equipment (See section 8). Control the movement of the spilled product (into drains, soil, across floors etc.) with absorbent spill materials. Collect contaminated spill material and place in container meeting appropriate U.N. packaging requirements. Decontaminate used equipment and affected spill area appropriately.

**Large Spills:** In addition to small spill precautions, determine personnel evacuation distances. Notify appropriate authorities if necessary.

**Environmental Precautions:** Collect and dispose of contaminated materials according to international, federal, state and local regulations. Keep away from surface and ground water, drains, and soil.

## SECTION 7 HANDLING AND STORAGE

**Handling:** Seek appropriate training to safely handle this product under normal conditions. Use the recommended personal protective equipment (See Section 8) to prevent chemical exposures. Wash hands with soap and water before eating, drinking, or touching common items (phone, computer, etc.) to prevent cross contamination. Use this product with adequate ventilation. See product technical data sheet for details.

**Storage:** See product technical data sheet for details.

**Specific use:** See product technical data sheet for details.

**SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION**

<b>Exposure Limit Values:</b>	OSHA PEL	NIOSH REL	ACGIH TLV	Other
Trometamol (Tris):	Not Listed	Not Listed	Not Listed	See Below
Russia:	OEL-RUSSIA STEL 5 mg/m <sup>3</sup> , JUN2003			
Glycine:	Not Listed	Not Listed	Not Listed	None
Sodium Chloride:	Not Listed	Not Listed	Not Listed	None
Sodium Azide:	Not Listed	0.1 ppm skin as HN <sub>3</sub> , 0.3 mg/m <sup>3</sup> skin as NaN <sub>3</sub> (Ceiling)	0.11 ppm as HN <sub>3</sub> , 0.29 mg/m <sup>3</sup> as Na N <sub>3</sub> (Ceilings), A4 Not classifiable as a human carcinogen.	See Below
Australia:	Ceiling Concentration 0.11 ppm (0.3 mg/m <sup>3</sup> ), JUL2008			
Belgium:	TWA 0.1 mg/m <sup>3</sup> , STEL 0.3 mg/m <sup>3</sup> , Skin, MAR2002			
Denmark:	TWA 0.1 mg/m <sup>3</sup> , OCT 2002			
E.C.:	TWA 0.1 mg/m <sup>3</sup> ; STEL 0.3 mg/m <sup>3</sup> (skin), FEB 2006			
Finland:	TWA 0.1 ppm (0.3 mg/m <sup>3</sup> ), STEL 0.3 ppm (0.9 mg/m <sup>3</sup> ), JAN1999			
France:	VME 0.1 mg/m <sup>3</sup> , VLE 0.3 mg/m <sup>3</sup> , Skin, FEB2006			
Germany:	MAK 0.2 mg/m <sup>3</sup> (inhalable), 2005			
Hungary:	TWA 0.1 mg/m <sup>3</sup> , STEL 0.3 mg/m <sup>3</sup> , SEP2000			
Korea:	Ceiling Concentration 0.1 ppm (0.3 mg/m <sup>3</sup> ), 2006			
The Netherlands:	MAC-TGG 0.1 mg/m <sup>3</sup> , Skin, 2003			
New Zealand:	Ceiling Concentration 0.11 ppm (0.29 mg/m <sup>3</sup> ), JAN2002			
Sweden:	TWA 0.1 mg/m <sup>3</sup> ; STEL 0.3 mg/m <sup>3</sup> , Skin, JUN2005			
Switzerland:	MAK- week 0.2 mg/m <sup>3</sup> , KZG- week 0.4e mg/m <sup>3</sup> , DEC2006			
United Kingdom:	TWA 0.1 mg/m <sup>3</sup> ; STEL 0.3 mg/m <sup>3</sup> (skin), 2005			

	<b>Normal Handling Conditions</b>	<b>Emergency Response Conditions</b>
<b>Engineering Controls:</b>	General room ventilation is adequate for the use of this product.	Provide negative pressure ventilation.
<b>Respiratory Protection</b>	Use appropriate respiratory protection.	Use appropriate respiratory protection.
<b>Eye Protection:</b>	Safety glasses with side shields.	Chemical splash goggles or other face protection as appropriate.
<b>Skin Protection:</b>	Laboratory coat, adequate chemical-resistant gloves.	Chemically resistant boots, clothes, and impermeable gloves as appropriate.
<b>Environmental Exposure Controls:</b>	Not available.	Not available.
<b>Other Equipment:</b>	Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.	

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear Colorless Liquid
<b>Odor:</b>	None
<b>Odor Threshold:</b>	Not Available
<b>pH:</b>	7.4
<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, 20 °C:</b>	Not Available
<b>Flammability (Solid/Gas):</b>	Not Available
<b>Explosive Limits:</b>	LEL: Not Available UEL: Not Available
<b>Vapor Pressure:</b>	Not Available
<b>Vapor Density, 20 °C:</b>	Not Available
<b>Relative Density (Water = 1.0):</b>	Not Available
<b>Solubility:</b>	Not Available
<b>Partition Coefficient (n-octanol/water):</b>	Not Available
<b>Auto Ignition Temperature (ASTM D1929):</b>	Not Available
<b>Decomposition Temperature:</b>	Not Available
<b>Oxidizing Properties:</b>	Not Available
<b>Viscosity, Centipoise:</b>	Not Available

**SECTION 10 STABILITY AND REACTIVITY**

<b>Chemical Stability:</b>	Product is stable under normal operating conditions and use as described in the product technical data sheet.
<b>Conditions to Avoid:</b>	See product technical data sheet for details.
<b>Incompatible Materials to Avoid:</b>	Strong acids or bases, strong oxidizers, and extreme temperatures.
<b>Hazardous Decomposition Products:</b>	Toxic gases and vapors may be released if involved in a fire.

**SECTION 11 TOXICOLOGICAL INFORMATION**

**Toxicology Data:** Toxicological information for this product as a whole does not exist, below is data for the individual components.

Trometamol (Tris): RTECS #TY2900000

Glycine: RTECS #MB7600000

Sodium Chloride: RTECS #VZ4725000

Sodium Azide: RTECS #VY8050000

	<b>Toxicity Test</b>	<b>Exposure Route</b>	<b>Dose</b>	<b>Observed Effect</b>
<b>Acute Toxicity:</b>				
Trometamol (Tris):	LD <sub>50</sub> (Rat)	Oral	5,900 mg/kg	N/A <sup>1</sup>
Glycine:	LD <sub>50</sub> (Rat)	Oral	7,930 mg/kg	N/A <sup>2</sup>
Sodium Chloride:	LD <sub>50</sub> (Rat)	Oral	3,000 mg/kg	N/A <sup>3</sup>
Sodium Azide:	LC <sub>50</sub> (Rat)	Inhalation	37 mg/m <sup>3</sup>	Eye: Other eye effects Behavioral: Convulsions or effect on seizure threshold Lung, Thorax, or Respiration: Structural or functional change in trachea or bronchi <sup>4</sup>
	Lowest Published Lethal Dose (Man)	Oral	29 mg/kg	Brain and Coverings: Increased intracranial pressure Cardiac: Pulse rate decreased with fall in BP Lung, Thorax, or Respiration: Acute pulmonary edema <sup>4</sup>
	LD <sub>50</sub> (Rat)	Oral	27 mg/kg	N/A <sup>4</sup>
	LD <sub>50</sub> (Rat)	Skin	50 mg/kg	N/A <sup>4</sup>
<b>Skin Corrosion/Irritation:</b>				
Sodium Chloride:	Skin Irritation (Rabbit)	Skin	500 mg/24H	Mild <sup>3</sup>
<b>Serious Eye Damage/Eye Irritation:</b>				
Sodium Chloride:	Eye Irritation (Rabbit)	Eye	100 mg/24H	Moderate <sup>3</sup>
	Eye Irritation (Rabbit)	Eye	10 mg	Moderate <sup>3</sup>
<b>Respiratory or Skin Sensitization:</b>	Not Available			
<b>Germ Cell Mutagenicity:</b>	Not Available			
<b>Reproductive Toxicity:</b>	Not Available			
<b>STOST-Single Exposure:</b>	Not Available			
<b>STOST-Repeated Exposure:</b>	Not Available			

**Aspiration Hazard:** Not Available

**Carcinogenicity:** Carcinogenetic information for this product as a whole does not exist, below is data for the individual components.

<b>Research Agency:</b>	OSHA:	NTP:	IARC:
Trometamol (Tris):	Not Listed	Not Listed	Not Listed
Glycine:	Not Listed	Not Listed	Not Listed
Sodium Chloride:	Not Listed	Not Listed	Not Listed
Sodium Azide:	Not Listed	Not Listed	Not Listed

## SECTION 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** Ecotoxicity information for this product as a whole does not exist, below is data for the individual components.

Trometamol (Tris):	No Response Selenastrum Capricornutum 96 Hours 200,000 ug/L <sup>5</sup>
	No Response Selenastrum Capricornutum 96 Hours 300,000 ug/L
	LC <sub>50</sub> Carassius Auratus 24 Hours 9,850,000 ug/L <sup>6</sup>
Sodium Chloride:	LC <sub>50</sub> Carassius Auratus 48 Hours 7,950,000 ug/L
	LC <sub>50</sub> Carassius Auratus 96 Hours 7,600,000 ug/L
	LC <sub>50</sub> Lepomis Macrochirus 24 Hours 1,800 ug/L <sup>7</sup>
Sodium Azide:	LC <sub>50</sub> Lepomis Macrochirus 48 Hours 800.0 ug/L
	LC <sub>50</sub> Lepomis Macrochirus 96 Hours 680.0 ug/L <sup>8</sup>

**Mobility:** Aquatic Fate:

Sodium azide is stable in water in the absence of light but appears to be susceptible to photo-decomposition by solar radiation. Photolysis of sodium azide may result in metal nitrides initially, with the eventual formation of the free metal and nitrogen gas.<sup>9</sup>

**Persistence and Degradation:** The dissipation of azides in soil is not by microbial action but is strictly a chemical process accelerated by increasing acidity and elevated temperature. Sodium azide dissipates rapidly in soils by oxidation or by reaction of hydrazoic acid with soil organic acids to form azides of these acids which decomposes by the Curtius rearrangement.<sup>10</sup>

**Bio Accumulative Potential:** Not Available

**Results of PBT Assessment:** Not Available

**Other Adverse Effects:** None

## SECTION 13 DISPOSAL INFORMATION

**Substance:** Dispose of unused contents in accordance with international, federal, state, and local regulations.

**Contaminated Packaging:** Dispose of container in accordance with international, federal, state and local requirements.

**SECTION 14 TRANSPORTATION INFORMATION**

**UN Number:** Not Listed  
**Class:** Not Listed  
**Proper Shipping Name:** Not Listed  
**Packing Group:** Not Listed  
**Marine Pollutant:** Not Listed  
**Other Applicable Information:** None

**SECTION 15 REGULATORY INFORMATION**

**Australia:** Hazchem Code: Not Listed  
Poisons Schedule Number: Not Listed

**California:** Proposition 65 Listed: Not Listed

**Canada:** WHMIS: D2B

**European Union:** REACH: Chemical Safety Assessment for the substance or substances in the preparation not required.

Substances of Very High Concern (SVHC) - October 28<sup>th</sup>, 2008: This product does not contain SVHC's in concentrations above 0.1% weight/weight.

Category of Danger: Xi: Irritant  
T+: Very Toxic  
N: Dangerous for the environment.

Risk Phrases: R36/38: Irritating to eyes and skin.  
R28: Very toxic if swallowed.  
R32: Contact with acids liberates very toxic gas.  
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases: S7/9: Keep container tightly closed and in a well-ventilated place.  
 S20/21: When using do not eat, drink or smoke.  
 S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and tepid water.  
 S29/35: Do not empty into drains; dispose of this material and its container in a safe way.  
 S36/37/39: Wear suitable protective clothing, gloves and eye/face protection.  
 S45: In case of accident or if you feel unwell, seek medical advice immediately

OECD/High Production Volume (HPV) Chemicals:

RoHS: This product does not contain RoHS listed substances in concentrations above the established thresholds.

<b>Japan:</b>	Poisonous and Deleterious Substances Control Law:	Sodium Azide: Poisonous Substance
<b>United Kingdom</b>	Control of Substances Hazardous to Health Regulations 2002 (COSHH) Rating:	

## SECTION 16 ADDITIONAL INFORMATION

**Training Advice:** Seek effective chemical handling training to reduce the hazards associated with this product prior to use.

**Technical Contact:** <http://www.millipore.com/support>

### Abbreviations Used

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	United States Environmental Protection Agency
IARC	International Agency for Research in Cancer.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization.
LC <sub>50</sub>	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD <sub>50</sub>	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
LDLo	Lowest observed lethal dose

LEL	Lower Explosive Limit
MSFU	Manufacture, Formulation, Supply and Use (Section 13)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	United States Occupational Safety and Health Administration
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
STOST	Specific Target Organ Systemic Toxicity
UEL	Upper Explosive Limit
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of the European Union regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) 1906/2006 and ANSI standard Z400.1-1998.

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<sup>1</sup> Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) file #TY2900000, 2009.

<sup>2</sup> Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) file #MB7600000, 2009.

<sup>3</sup> Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) file #VZ4725000, 2009.

<sup>4</sup> Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) file #VY8050000, 2009.

<sup>5</sup> Adams, N., K.H. Goulding, and A.J. Dobbs, Toxicity of Eight Water-Soluble Organic Chemicals to *Selenastrum capricornutum*: A Study of Methods for Calculating Toxic Values Using Different Growth Parameters, *Arch. Environ. Contam. Toxicol.* 14(3):333-345, 1985.

<sup>6</sup> Adelman, I.R.Jr., Standard Test Fish Development. Part I. Fathead Minnows (*Pimephales promelas*) and Goldfish (*Carassius auratus*) as Standard Fish in, EPA-600/3-76-061A, U.S.EPA, Duluth, MN :77 p., 1976.

<sup>7</sup> Hughes, J.S., Use of the Red Crawfish, *Procambarus clarki* (Girard), for Herbicidal Assays, *Proc. Annu. Conf. Southeast. Assoc. Game Fish Comm.* 20:437-439, 1967.

<sup>8</sup> Mayer, F.L.Jr., and M.R. Ellersieck, Manual of Acute Toxicity: Interpretation and Data Base for 410 Chemicals and 66 Species of Freshwater Animals, Resour. Publ.No.160, U.S.Dep.Interior, Fish Wildl.Serv., Washington, DC :505 p. (USGS Data File), 1986.

<sup>9</sup> USEPA; Chemical Hazard Information Profile: Sodium Azide p.242 (1977) EPA-560/11-80-011.

<sup>10</sup> Weed Science Society of America. Herbicide Handbook. 5th ed. Champaign, Illinois: Weed Science Society of America, 1983., p. 440.