



**GTI DIAGNOSTICS®**  
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# MATERIAL SAFETY DATA SHEET

(Based on Directive 91/155/EEC et seq.)

Art. Code: M-AMS

Product Name: MICROAMS®: HLA Class I and HLA Class II

## 1. INFORMATION OF THE SUBSTANCE/PREPARATION AND COMPANY

- 1.1 Product name MICROAMS®: HLA Class I and HLA Class II
- Catalog # M-AMS
- Kit components  
 Microwell Strips with holder  
 Concentrated Wash (10x)  
 Specimen Diluent  
 Lysate and Conjugate Diluent  
 Substrate Buffer  
 Stopping Solution  
 Conjugate: Anti-Human IgG  
 PNPP Substrate  
 Positive Serum Control  
 Negative Serum Control  
 Class I Lysate Control Reagent  
 Class II Lysate Control Reagent  
 Dried Lymphocyte Control  
 Plate Sealers
- 1.2 Company GTI DIAGNOSTICS  
 20925 Crossroads Circle, Suite 200  
 Waukesha, WI 53186-4054, USA  
 (262) 754-1000 OR 1-800-233-1843
- 1.3 In emergencies After normal business hours, weekends, and holidays:  
 Call your local emergency center.  
 For Chemical Emergency Spill Leak Fire Exposure  
 or Accident call CHEMTREC  
 Domestic North America: 800-424-9300  
 International: 703-527-3887 (collect calls accepted)

## 2. COMPONENTS AND HAZARDOUS INGREDIENTS

Kit Components	Hazardous Ingredients	Classification Substance	EINECS NR.
Concentrated Wash (10x)	1 % Sodium azide (NaN <sub>3</sub> )	T+, N, R28-32-50/53	247-852-1
	2 % Tween 20		
	8.5 % NaCl		
Specimen Diluent	6.9 % Trizma HCl	T+, N, R28-32-50/53	247-852-1
	0.1 % Sodium azide (NaN <sub>3</sub> )		
	0.2 % Tween 20		
	Contains bovine and murine proteins		214-684-5



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<b>Lysate and Conjugate Diluent</b>	0.05 % Sodium azide 0.9 % NaCl	T+, N, R28-32-50/53	247-852-1 231-598-3
<b>Negative Serum Control</b>	0.1% Sodium Azide (NaN <sub>3</sub> ) Contains material from human origin	T+, N, R28-32-50/53	247-852-1
<b>Positive Serum Control</b>	0.1 % Sodium azide (NaN <sub>3</sub> ) Contains material from human origin	T+, N, R28-32-50/53	247-852-1
<b>Microwell Strips</b>	Contains bovine proteins Contains material from murine origin		
<b>Stopping Solution</b>	12 % Sodium hydroxide (NaOH)	C, R35	215-185-5
<b>Substrate Buffer</b>	0.02 % Sodium azide (NaN <sub>3</sub> ) 9.7 % Diethanolamine	T+, N, R28-32-50/53 Xn, R22-38-41-48/22	247-852-1 203-868-0
<b>Conjugate: Anti-Human IgG</b>	0.1 % Sodium azide (NaN <sub>3</sub> ) Contains bovine and goat proteins	T+, N, R28-32-50/53	247-852-1
<b>Lysate Control Reagent (Class I and Class II)</b>	0.1% Sodium azide (NaN <sub>3</sub> ) Contains material from bovine and murine origin	T+, N, R28-32-50/53	247-852-1
<b>Dried Lymphocyte Control</b>	Contains material from human origin Contains bovine proteins		
<b>Lymphocyte Lysis Buffer</b>	0.5 % Sodium azide (NaN <sub>3</sub> ) 2 % Detergent	T+, N, R28-32-50/53 Xi. R37/38, 41	247-852-1

### 3. HAZARDS IDENTIFICATION

#### Concentrated Wash (10x)

Toxic if swallowed

Irritating to eyes, respiratory system and skin

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

#### Stopping Solution

Causes severe burns

#### Positive Serum Control, Negative Serum Control

Harmful if swallowed

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Contains material of human origin. Although these materials have been tested for HBsAg, anti-HCV and anti-HIV-1/2 and have been found not reactive, they should be considered as potentially infectious.

#### Substrate Buffer

Irritating to eyes

#### Conjugate: Anti-Human IgG, Specimen Diluent, Class I Lysate Control Reagent , Class II Lysate Control Reagent

Harmful if swallowed

Animal proteins are potentially infectious.



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## Dried Lymphocyte Control

Contains material of human and bovine origin. Although these materials have been tested for HBsAg, anti-HCV and anti-HIV-1/2 and have been found not reactive, they should be considered as potentially infectious. Animal proteins are potentially infectious.

## Lymphocyte Lysis Buffer

Harmful if swallowed  
Irritating to skin and eyes.

## 4. FIRST AID MEASURES

**Concentrated Wash (10x), Negative Serum Control, Positive Serum Control, Substrate Buffer, Specimen Diluent, Lysate and Conjugate Diluent, Conjugate: Anti-Human IgG, Class I Lysate Control Reagent, Class II Lysate Control Reagent, Dried Lymphocyte Control, Lymphocyte Lysis Buffer**

*Eye contact:* - Rinse immediately with water for 15 minutes

- Do not apply neutralizing agents

- Consult a doctor/medical service if irritation persists

*Skin contact:* - Rinse with water

- Remove clothing before washing

- Consult a doctor/medical service if irritation persists

*After inhalation:* - Remove the victim into fresh air

- Unconscious: maintain adequate airway and respiration

- Consult a doctor/medical service if breathing problems develop

*After ingestion:* - Never give water to an unconscious person

- Victim is fully conscious: immediately induce vomiting (only applies to Concentrated Wash)

- Give nothing (little) to drink

- Consult a doctor/medical service if you feel unwell

## Stopping Solution

*Eye contact:* - Rinse immediately with plenty of water for 15 minutes

- Do not apply neutralizing agents

- Consult a doctor/medical service if irritation persists

*Skin contact:* - Consult a doctor/medical service

- Wash immediately with lots of water and soap for 15 minutes

- Remove clothing while washing

- Consult a doctor/medical service if irritation persists

*After inhalation:* - Remove the victim into fresh air

- Unconscious: maintain adequate airway and respiration

- Consult a doctor/medical service if breathing problems develop

*After ingestion:* - Immediately give lots of water to drink

- Never give water to an unconscious person

- Do not induce vomiting

- Consult a doctor/medical service if you feel unwell



## 5. FIRE FIGHTING MEASURES

### All Kit Components

*Suitable extinguishing media:*

*Unsuitable extinguishing media:*

*Special exposure hazards:*

*Instructions:*

*Special protective equipment for firefighters:*

- All non-combustible extinguishing media allowed
- No data available
- On heating, burning: formation of small quantities of nitrous vapors, carbon monoxide, carbon dioxide
- Take account of toxic fire fighting water
- Use fire-fighting water moderately and contain it
- Heat/fire exposure: compressed air/oxygen apparatus
- Heat/fire exposure: gas-tight suit

## 6. ACCIDENTAL RELEASE MEASURES

### All Kit Components

*Personal protection:* see 8

*Environmental precautions:*

- Prevent soil and water pollution
- Discharge according to local regulations

*Clean-up:*

- Take up liquid spill into absorbent material
- Discharge of absorbed material according to local regulations
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

## 7. HANDLING AND STORAGE

### All Kit Components

*Handling:*

- Observe normal hygiene standards, except Concentrated Wash (10x) (strict hygiene) and stopping solution (very strict hygiene)
- Discharge according to local regulations
- Remove and clean contaminated clothing
- Handle and open the container with care

*Storage:*

- Keep container tightly closed
- Meet the legal requirements
- Keep away from: heat sources, combustible materials, acids, metals
- Storage temperature: see component label



**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**8.1 Exposure Limits**

Chemical/Component	TLV/NIOSH REL	OSHA PEL
Sodium azide (as NaN <sub>3</sub> )	0.3 mg/m <sup>3</sup> ACGIH TLV-CL	Not listed
Sodium azide (as HN <sub>3</sub> )	0.1 ppm	Not listed
Sodium hydroxide	2 mg/m <sup>3</sup>	TWA 2mg/m <sup>3</sup>

Information in above table from NIOSH Pocket Guide to Chemical Hazards, 2003.

**8.2 Control of Exposure**

**All Kit Components**

- Eye protection:*
  - Safety glasses (Substrate Buffer)
  - Face shield (Other components)
- Hand protection:*
  - Gloves
- Suitable materials:*
  - Butyl rubber, natural rubber, neoprene, nitrile rubber, polyethylene, PVC (Stopping Solution)
  - No data available (Other components)
- Skin protection:*
  - Corrosion proof clothing (Stopping Solution)
  - Protective clothing (Other components)
- Respiratory protection:* - Insufficient ventilation: wear respiratory protection (Concentrated Wash (10x))

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**All Kit Components**

Liquid (except PNPP powder, Dried Lymphocyte Control and Microwell strips)

**Conjugate: Anti-Human IgG, Specimen Diluent, Lysate and Conjugate Diluent, Class I Lysate Control Reagent, Class II Lysate Control Reagent**

Light blue

**Positive Serum Control, Negative Serum Control**

Clear and slightly yellow to amber

**Substrate Buffer**

Clear to faintly yellow

**Lymphocyte Lysis Buffer**

Dark blue



**10. STABILITY AND REACTIVITY**

**All Kit Components**

*Stability:* All components are stable until expiry date if stored in specified conditions (see label)

*Reactivity/Hazardous decomposition products:* No hazardous decomposition products are formed in high quantities

*Conditions/Materials to avoid:* Keep away from metals and acids (Stopping Solution, Azide containing components)

**11. TOXICOLOGICAL INFORMATION**

See “2. Composition/Information on ingredients” to identify the kit components that contain the substances mentioned in this section

**Acute toxicity:**

<i>Sodium azide:</i>	LD50 oral rat	: 27 mg/kg
	LD50 dermal rabbit	: 20 mg/kg
<i>Sodium hydroxide:</i>	LD50 dermal rabbit	: 1,350 mg/kg
<i>Diethanolamine:</i>	LD50 oral rat	: 710/3,450 mg/kg
<i>Detergent:</i>	LD50 oral rat	: 4,190 mg/kg
<i>Tween 20:</i>	LD50 oral rat	: 36,700 µl/kg
<i>NaCl:</i>	LD50 oral rat	3,000 mg/kg
	LD50 dermal rat	> 10,000 mg/kg

**Chronic toxicity:**

<i>Sodium azide:</i>	Carcinogenicity (TLV) : A4 Target Organ(s): nerves, heart, brain, laboratory experiments have shown mutagenic effects
<i>Diethanolamine:</i>	Carcinogenicity (MAK) : 3A Target Organ(s): liver, kidneys, blood
<i>Detergent:</i>	Mutagen
<i>Sodium Hydroxide:</i>	Teratogen, Mutagen, Carcinogen
<i>Tween 20:</i>	Teratogen, Reproductive Hazard
<i>NaCl:</i>	Teratogen, Mutagen, Reproductive Hazard

**Routes of exposure**

Ingestion, inhalation, eyes and skin

Caution! Most components contain (a) substance(s) that are absorbed through the skin

**Acute effects/symptoms**

*Concentrated Wash (10x):*

- Toxic if swallowed
- May cause skin irritation, eye irritation, vomiting, and diarrhea upon ingestion
- May irritate mucous membranes and upper respiratory tract



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*Negative Serum Control, Positive Serum Control, Specimen Diluent, Lysate and Conjugate Diluent, Conjugate: Anti-Human IgG, Class I Lysate Control Reagent, Class II Lysate Control Reagent, Lymphocyte Lysis Buffer:*

- Harmful if swallowed
- May cause skin irritation, eye irritation, vomiting, and diarrhea upon ingestion.
- May be harmful if inhaled
- May irritate mucous membranes and upper respiratory tract.

*Substrate Buffer:*

- After skin contact: red skin
- After eye contact: irritation and redness of the eye tissue

*Stopping Solution:*

- Highly corrosive to skin and eyes
- After ingestion: vomiting, diarrhea, burns to the gastric/intestinal mucosa, possible esophageal perforation, bleeding of the gastrointestinal tract, shock.
- After skin contact: caustic burns/corrosion of the skin and slow-healing wounds
- After eye contact: corrosion

*Sodium azide containing components:*

- May cause nausea, headache, vomiting. Experiments have shown animals to produce hypotensive effects, demyelination of myelinated nerve fibers in the CNS, testicular damage, blindness, attacks of rigidity, hepatic and cerebral effects.

*Lymphocyte Lysis Buffer:*

- May cause skin irritation, severe eye irritation
- Harmful if swallowed
- May be harmful when inhaled

## Chronic effects

See also Chronic Toxicity. Other components do not contain substances with a known chronic effect (e.g. carcinogenicity, mutagenicity, toxicity to reproduction)

## 12. ECOLOGICAL INFORMATION

### Aquatic toxicity

- Sodium azide:*
- LC50 (96 h) : 0.8 mg/l (SALMO GAIRDNERI/ONCORHYNCHUS MYKISS)
  - LC50 (96 h) : 0.7 mg/l (LEPOMIS MACROCHIRUS)
  - LC50 (48 h) : 9 mg/l (GAMMARUS SP.)
- Diethanolamine:*
- LC50 (96 h) : 1664 mg/g (PIMEPHALES PROMELAS)
  - EC50 (48 h) : 55 mg/l (DAPHNIA MAGNA)
  - EC50 (72 h) : 75 mg/l (SCENEDESMUS SUBSPICATUS)
- Caustic soda:*
- LC50 (96 h) : 45.4 mg/l (SALMO GAIRDNERI/ONCORHYNCHUS MYKISS)
  - LC50 (48 h) : 100 mg/l (DAPHNIA MAGNA)

### Other information

- WGK: 1 (Classification based on the components as per Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- Effect on the ozone layer: Not dangerous for the ozone layer (1999/45/EC)
- Greenhouse effect: No data available
- Effect on wastewater purification: No data available



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## 13. WASTE DISPOSAL CONSIDERATIONS

*Provisions relating to waste:* Hazardous waste (91/689/EEC)

*Packaging/container:* Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10 (packaging containing residues of or contaminated by dangerous substances)

*Disposal methods:*

- Patient samples, Negative Serum Control, Positive Serum Control, Specimen Diluent, Lysate and Conjugate Diluent, Class I Lysate Control Reagent, Class II Lysate Control Reagent, Dried Lymphocyte Control and Conjugate: Anti-Human IgG are potentially infectious. They should be disposed of following established safety procedures and local regulations.
- All the kit components must be considered as hazardous waste. They should be disposed of following local regulations.
- Sodium azide reacts with lead and copper plumbing forming highly explosive metal azides.

## 14. TRANSPORT INFORMATION

No restrictions.

## 15. REGULATORY INFORMATION

Classification according to directives 67/548/EEC and 1999/45/EC

### Concentrated Wash (10x)

Contains: Sodium azide



Toxic

- R25 : Toxic if swallowed  
R52/53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
S23 : Do not breathe vapour  
S45/46 : If swallowed, in case of accident, or if you feel unwell, seek medical advice immediately and show this container or label  
S61 : Avoid release to the environment. Refer to special instructions/safety data sheets.



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## Stopping Solution

Contains: Sodium hydroxide (Caustic soda)



Corrosive

- R35 : Causes severe burns  
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
S37/39 : Wear suitable gloves and eye/face protection  
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible)

## Negative Serum Control, Positive Serum Control, Specimen Diluent, Conjugate: Anti-Human IgG, Class I Lysate Control Reagent, Class II Lysate Control Reagent, Lymphocyte Lysis Buffer

Contains: Sodium azide



Harmful

- R22 : Harmful if swallowed  
R52/53 : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment  
S23 : Do not breathe vapour  
S45/46 : If swallowed, in case of accident, or if you feel unwell, seek medical advice immediately and show this container or label  
S61 : Avoid release to the environment. Refer to special instructions/safety data sheets.

## Substrate Buffer



Irritant

- R36 : Irritating to eyes  
S26 : In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
S36/37/39 : Wear eye/face protection, suitable protective clothing and gloves.  
S45/46 : If swallowed, in case of accident, or if you feel unwell, seek medical advice immediately and show this container or label



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## 16. OTHER INFORMATION

Professionals design this product for use.

The human serum included in this kit has been tested by FDA approved methods and found negative for HBsAg, anti-HCV and anti-HIV-1/2. No known method can offer complete assurance that human blood derivatives will not transmit hepatitis, AIDS or other infections. Therefore, handling of reagents, serum or plasma specimens should be in accordance with local safety procedures.

All animal products and derivatives have been collected from healthy animals. Bovine components originate from countries where BSE has not been reported.

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

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