



04/05/2010

### Kit Components

Product code	Description
<b>31020</b>	<b>Kallestad Anti-Histone Microplate EIA Kit</b>

Components:

C2/FRNP175	Kallestad Positive Controls 1
C0	Kallestad Negative Control
C1/FARO370	Kallestad Reference Controls C1, C2, C3, C4
S0	Kallestad Calibrator 1
S1	Kallestad Calibrators 2, 3, 4, 5
R4	IgG/IgM Conjugates
R3	Wash Buffer Concentrate (16X)
R2/FAID130	Sample Diluent Concentrate B
R6	Stop Solution
R5	Substrate

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 03/23/2010

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Kallestad Positive Controls 1
- **Catalog or product number:** C2/FRNP175, C2/FARO175, C7/FARO275, C6/FRNP175, C2/FCCP175
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547  
1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization:**
- **CAS No. Description:**  
Human Source Material
- **Identification number(s):**
- **EINECS Number:** 268-338-3
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with non-hazardous additions.

· **Listing of dangerous and non-hazardous components:**

26628-22-8	sodium azide	T+, N; R 28-32-50/53	0.01-0.1%
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- **Additional information** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:**  
Xn Harmful
- **Routes of exposure:** Ingestion
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
R 22 Harmful if swallowed.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

**4 First aid measures**

- **General information**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.

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**Trade name: Kallestad Positive Controls 1**

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- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Immediately call a doctor.

**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:** No special measures required.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

**Components with limit values that require monitoring at the workplace:**

**26628-22-8 sodium azide**

REL (United States)	Short-term value: C 0.3** mg/m <sup>3</sup> , C 0.1* ppm *as HN3 vapor; **as NaN3; Skin
TLV (United States)	Short-term value: C 0.29** mg/m <sup>3</sup> , C 0.11* ppm *as HN3 vapor **as NaN3

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves

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Trade name: Kallestad Positive Controls 1

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- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

## 9 Physical and chemical properties:

### · General Information

<b>Form:</b>	liquid
<b>Color:</b>	Light yellow
<b>Odor:</b>	Odorless

### · Change in condition

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

### · Solubility in / Miscibility with

**Water:** Soluble

### · Solvent content:

**Organic solvents:** 0.0 %

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions**  
This product contains sodium azide. Sodium azide can react with copper, brass, lead, and solder in piping systems to form explosive compounds of lead azide and copper azide.
- **Dangerous products of decomposition:** No dangerous decomposition products known

## 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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**Material Safety Data Sheet**

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Reviewed on 03/23/2010

**Trade name: Kallestad Positive Controls 1**

Harmful

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**13 Disposal considerations**

- **Product:**
- **Recommendation**  
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.  
 Hand over to hazardous waste disposers.  
 Flush pipes with water frequently if discarding solutions containing sodium azide into metal piping systems.*
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*

**14 Transport information**

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

**15 Regulations**

- **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

- **Section 302/304 (40CFR355.30 / 40CFR355.40):**

26628-22-8 sodium azide

- **Section 313 (40CFR372.65):**

26628-22-8 sodium azide

- **TSCA (Toxic Substances Control Act):**

26628-22-8 sodium azide

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

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Trade name: Kallestad Positive Controls 1

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**· Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

**· Code letter and hazard designation of product:**

Xn Harmful

**· Hazard-determining components of labelling:**

sodium azide

**· Risk phrases:**

22 Harmful if swallowed.

**· Safety phrases:**

36 Wear suitable protective clothing.

**16 Other information:**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environmental Health and Safety.

**· Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **\* Data compared to the previous version altered.**

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 03/23/2010

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Kallestad Negative Control
- **Catalog or product number:** C0
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization:**
- **CAS No. Description:**  
Human Source Material
- **Identification number(s):**
- **EINECS Number:** 268-338-3
- **Additional information:** For the wording of the listed risk phrases refer to section 15.
- **Chemical characterization**
- **Additional information** Contains human sourced and/or potentially infectious components.

**3 Hazards identification**

- **Emergency overview:** not applicable
- **Information pertaining to particular dangers for man and environment** not applicable
- **Classification system**  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **NFPA ratings (scale 0-4)**  
Health = 0  
Fire = 0  
Reactivity = 0
- **Special Hazards** Contains human sourced and/or potentially infectious components.

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Rinse mouth with water. Seek medical attention and appropriate follow-up.
- **Information for doctor**
- **The following symptoms may occur:**  
Eye irritation

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## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 03/23/2010

Trade name: Kallestad Negative Control

Skin irritation

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**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** Wear fully protective suit.

**6 Accidental release measures**

- **Person-related safety precautions:** Wear protective clothing.
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
Follow the usual biosafety practices for handling potentially infectious materials.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Protective gloves.
- **Material of gloves** Synthetic gloves

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**Trade name: Kallestad Negative Control**

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- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Opaque
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

· **Solubility in / Miscibility with**

<b>Water:</b>	Fully miscible
<b>Organic solvents:</b>	0.0 %

**Solids content:** 99.9 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.

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Reviewed on 03/23/2010

**Trade name: Kallestad Negative Control**

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**Additional toxicological information:**

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The substance is not subject to classification according to the latest version of the EU lists.

**Target organs:** Not applicable.

**12 Ecological information:**

**Additional ecological information:**

**General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**13 Disposal considerations**

**Product:**

**Recommendation**

Can be disposed of with household garbage with prior chemical-physical or biological treatment following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

**DOT regulations:**

**Hazard class:** -

**Land transport ADR/RID (cross-border)**

**ADR/RID class:** -

**Maritime transport IMDG:**

**IMDG Class:** -

**Marine pollutant:** No

**Air transport ICAO-TI and IATA-DGR:**

**ICAO/IATA Class:** -

**Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulations**

**SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

**Section 302/304 (40CFR355.30 / 40CFR355.40):**

Substance not listed.

**Section 313 (40CFR372.65):**

Substance is not listed.

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## Material Safety Data Sheet

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Reviewed on 03/23/2010

Trade name: Kallestad Negative Control

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· **TSCA (Toxic Substances Control Act):**

Substance is not listed.

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

· **Markings according to EU guidelines:**

Observe the general safety regulations when handling chemicals

The substance is not subject to classification according to EU lists and other sources of literature known to us.

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).

· **National regulations**· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**16 Other information:**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environmental Health and Safety.· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **\* Data compared to the previous version altered.**

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Kallestad Reference Controls C1, C2, C3, C4
- **Catalog or product number:**  
C1/FARO370, C1/FASM370, C1/FRNP370, C1/FALA370, C1/FTPO270, C1/FDNA170, C1/SSCL170, C1/FAJO170, C1/FANA170, C1/FCEN170, C1/FHIS170, C1/FMIT170, C1/FSWS170, C1/FPRO170, C1/FMPO170, C1/FATG170, C1/FGBM170, C2/FRNP370, C3/FARO370, C4/FALA370, C1/FCCP170
- **Application of the substance / the preparation** *In-vitro* laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547  
1(510)724-7000
- **Information department:** *Technical services, customer support.*
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** *Mixture of the substances listed below with non-hazardous additions.*
- **Listing of dangerous and non-hazardous components:** *Void*
- **Additional information** *For the wording of the listed risk phrases refer to section 15.*

**3 Hazards identification**

- **Emergency overview:** *not applicable*
- **Information pertaining to particular dangers for man and environment**  
*The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.*
- **Classification system**  
*The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.*  
*The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.*

**4 First aid measures**

- **General information** *No special measures required.*
- **After inhalation** *Supply fresh air; consult doctor in case of complaints.*
- **After skin contact** *Generally the product does not irritate the skin.*
- **After eye contact** *Rinse opened eye for several minutes under running water.*
- **After swallowing** *Induce vomiting and call for medical help.*

**5 Fire fighting measures**

- **Suitable extinguishing agents**  
*CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.*

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**Trade name: Kallestad Reference Controls C1, C2, C3, C4**

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· **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:** Dilute with plenty of water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures** The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless

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**Trade name: Kallestad Reference Controls C1, C2, C3, C4**

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- **Change in condition**  
*Melting point/Melting range: undetermined*  
*Boiling point/Boiling range: undetermined*
- **Flash point:** *Not applicable*
- **Auto igniting:** *Product is not selfigniting.*
- **Danger of explosion:** *Product does not present an explosion hazard.*
- **Density:** *Not determined*
- **Solubility in / Miscibility with Water:** *Fully miscible*
- **Solvent content:**  
*Organic solvents: 0.0 %*  
*Solids content: 99.9 %*

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
- **Materials to be avoided:**
- **Dangerous reactions** *No dangerous reactions known*
- **Dangerous products of decomposition:** *No dangerous decomposition products known*

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**  
*on the skin: No irritant effect.*  
*on the eye: No irritant effect.*
- **Sensitization:** *No sensitizing effects known.*
- **Additional toxicological information:**  
*The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.*  
*When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.*
- **Target organs:** *Not applicable.*

**12 Ecological information:**

- **Additional ecological information:**
- **General notes:** *Generally not hazardous for water.*

**13 Disposal considerations**

- **Product:**
- **Recommendation** *Hand over to hazardous waste disposers.*

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**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Kallestad Reference Controls C1, C2, C3, C4**

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -
- **Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulations**

- **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**
- **Section 302/304 (40CFR355.30 / 40CFR355.40):**  
None of the ingredients is listed.
- **Section 313 (40CFR372.65):**  
None of the ingredients is listed.
- **TSCA (Toxic Substances Control Act):**  
None of the ingredients is listed.
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)**  
None of the ingredients is listed.
- **NTP (National Toxicology Program)**  
None of the ingredients is listed.
- **OSHA-Ca (Occupational Safety & Health Administration)**  
None of the ingredients is listed.
- **Markings according to EU guidelines:**  
Observe the general safety regulations when handling chemicals  
The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **National regulations**
- **Water hazard class:** Generally not hazardous for water.

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**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Kallestad Reference Controls C1, C2, C3, C4**

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**16 Other information:**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· \* **Data compared to the previous version altered.**

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## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Kallestad Calibrator 1
- **Catalog or product number:** S0
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization:**
- **CAS No. Description:**  
7732-18-5 water
- **Identification number(s):**
- **EINECS Number:** 231-791-2
- **Additional information:** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:** not applicable
- **Information pertaining to particular dangers for man and environment** not applicable
- **Classification system**  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **NFPA ratings (scale 0-4)**  
Health = 0  
Fire = 0  
Reactivity = 0

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Rinse out mouth and then drink plenty of water.
- **Information for doctor**
- **The following symptoms may occur:**  
Eye irritation  
Skin irritation

**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Kallestad Calibrator 1**

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**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:** Dilute with plenty of water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

**Components with limit values that require monitoring at the workplace:**

**26628-22-8 sodium azide**

REL (United States)	Short-term value: C 0.3** mg/m <sup>3</sup> , C 0.1* ppm *as HN3 vapor; **as NaN3; Skin
TLV (United States)	Short-term value: C 0.29** mg/m <sup>3</sup> , C 0.11* ppm *as HN3 vapor **as NaN3

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures** The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Protective gloves.
- **Material of gloves** Synthetic gloves

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Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Kallestad Calibrator 1**

(Contd. of page 2)

- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** 0°C  
**Boiling point/Boiling range:** 100°C

· **Flash point:** Not applicable

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapor pressure at 20°C:** 23 hPa

· **Density at 20°C:** 1 g/cm<sup>3</sup>

· **Solubility in / Miscibility with**

<b>Water:</b>	Fully miscible
<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	97.8 %

**Solids content:** 1.2 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions**  
This product contains sodium azide. Sodium azide can react with copper, brass, lead, and solder in piping systems to form explosive compounds of lead azide and copper azide.
- **Dangerous products of decomposition:** No dangerous decomposition products known

DUS

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## Material Safety Data Sheet

Printing date 04/05/2010

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Trade name: Kallestad Calibrator 1

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## \* 11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.  
The substance is not subject to classification according to the latest version of the EU lists.
- **Target organs:** Not applicable.

## \* 12 Ecological information:

- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.

## 13 Disposal considerations

- **Product:**
- **Recommendation**  
Dispose of waste in accordance to applicable national, regional, or local regulations.  
Flush pipes with water frequently if discarding solutions containing sodium azide into metal piping systems.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

## 14 Transport information

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

- **Transport/Additional information:** Not dangerous according to the above specifications.

DUS

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**Material Safety Data Sheet**

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Reviewed on 10/21/2009

**Trade name: Kallestad Calibrator 1**

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**15 Regulations**

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

Substance not listed.

· **Section 313 (40CFR372.65):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

7732-18-5 water

26628-22-8 sodium azide

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

· **Markings according to EU guidelines:**

Observe the general safety regulations when handling chemicals

The substance is not subject to classification according to EU lists and other sources of literature known to us.

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).

· **National regulations**

· **Water hazard class:** Generally not hazardous for water.

**16 Other information:**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· \* **Data compared to the previous version altered.**

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Kallestad Calibrators 2, 3, 4, 5
- **Catalog or product number:** S1, S2, S3, S4
- **Application of the substance / the preparation** *In-vitro laboratory reagent or component*
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** *Technical services, customer support.*
- **Emergency information:**  
1(800) 424-9300 *Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.*

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** *Mixture of the substances listed below with non-hazardous additions.*
- **Listing of dangerous and non-hazardous components:** *Void*
- **Additional information**  
*Contains human sourced and/or potentially infectious components.  
For the wording of the listed risk phrases refer to section 15.*

**3 Hazards identification**

- **Emergency overview:** *not applicable*
- **Information pertaining to particular dangers for man and environment**  
*The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.*
- **Classification system**  
*The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.*
- **NFPA ratings (scale 0-4)**  
*Health = 0  
Fire = 0  
Reactivity = 0*
- **Special Hazards** *Contains human sourced and/or potentially infectious components.*

**4 First aid measures**

- **General information**  
*Seek medical treatment.  
No special measures required.*
- **After inhalation** *Supply fresh air; consult doctor in case of complaints.*
- **After skin contact** *Generally the product does not irritate the skin.*
- **After eye contact** *Rinse opened eye for several minutes under running water.*
- **After swallowing** *Rinse mouth with water. Seek medical attention and appropriate follow-up.*

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## Material Safety Data Sheet

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Trade name: Kallestad Calibrators 2, 3, 4, 5

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- **Information for doctor**
- **The following symptoms may occur:**  
Skin irritation  
Eye irritation

\* **5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** Wear fully protective suit.

\* **6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:** Dilute with plenty of water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

\* **7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

\* **8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
Follow the usual biosafety practices for handling potentially infectious materials.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Protective gloves.
- **Material of gloves** Synthetic gloves

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**Material Safety Data Sheet**

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**Trade name: Kallestad Calibrators 2, 3, 4, 5**

(Contd. of page 2)

- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **Solvent content:**

**Organic solvents:** 0.0 %

**Solids content:** 99.9 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.

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**Material Safety Data Sheet**

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**Trade name: Kallestad Calibrators 2, 3, 4, 5**

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- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **Target organs:** Not applicable.

**12 Ecological information:**

- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.

**13 Disposal considerations**

- **Product:**
- **Recommendation**  
Can be disposed of with household garbage with prior chemical-physical or biological treatment following consultation with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

· **Transport/Additional information:** Not dangerous according to the above specifications.

**15 Regulations**

- **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**
- **Section 302/304 (40CFR355.30 / 40CFR355.40):**  
All ingredients are listed.
- **Section 313 (40CFR372.65):**  
All ingredients are listed.

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**Trade name: Kallestad Calibrators 2, 3, 4, 5**

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**· TSCA (Toxic Substances Control Act):**

None of the ingredients is listed.

**· Carcinogenic categories**

**· IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

**· NTP (National Toxicology Program)**

None of the ingredients is listed.

**· OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

**· Markings according to EU guidelines:**

Observe the general safety regulations when handling chemicals

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).

**· National regulations**

**· Water hazard class:** Generally not hazardous for water.

**16 Other information:**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

**· Department issuing MSDS:** Environmental Health and Safety.

**· Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

**· \* Data compared to the previous version altered.**

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** IgG/IgM Conjugates
- **Catalog or product number:** R4
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with non-hazardous additions.
- **Listing of dangerous and non-hazardous components:** Void
- **Additional information** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:** not applicable
- **Information pertaining to particular dangers for man and environment**  
The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **NFPA ratings (scale 0-4)**  
Health = 0  
Fire = 0  
Reactivity = 0

**4 First aid measures**

- **General information** No special measures required.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Rinse mouth with water. Seek medical attention and appropriate follow-up.
- **Information for doctor**
- **The following symptoms may occur:**  
Eye irritation

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**Trade name: IgG/IgM Conjugates**

Skin irritation

(Contd. of page 1)

**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Wear protective clothing.
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Additional information:** No dangerous substances are released.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

**26628-22-8 sodium azide**

REL (United States)	Short-term value: C 0.3** mg/m <sup>3</sup> , C 0.1* ppm *as HN3 vapor; **as NaN3; Skin
TLV (United States)	Short-term value: C 0.29** mg/m <sup>3</sup> , C 0.11* ppm *as HN3 vapor **as NaN3

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures** The usual precautionary measures for handling chemicals should be followed.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Protective gloves.
- **Material of gloves** Synthetic gloves

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**Trade name: IgG/IgM Conjugates**

(Contd. of page 2)

- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Blue
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** 219°C

- |  |   |
|--|---|
| · <b>Flash point:</b>                            | Not applicable                                |
| · <b>Auto igniting:</b>                          | Product is not selfigniting.                  |
| · <b>Danger of explosion:</b>                    | Product does not present an explosion hazard. |
| · <b>Density:</b>                                | Not determined                                |
| · <b>Solubility in / Miscibility with Water:</b> | Fully miscible                                |
| · <b>pH-value at 20°C:</b>                       | 8   |
| · <b>Solvent content:</b>                        |   |
| <b>Organic solvents:</b>                         | 0.0 %   |
| <b>Solids content:</b>                           | 100.0 %                                       |

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions**  
This product contains sodium azide. Sodium azide can react with copper, brass, lead, and solder in piping systems to form explosive compounds of lead azide and copper azide.
- **Dangerous products of decomposition:** No dangerous decomposition products known

**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

Trade name: IgG/IgM Conjugates

(Contd. of page 3)

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
 The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:  
 When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.
- **Target organs:** Not applicable.

**12 Ecological information:**

- **Additional ecological information:**
- **General notes:**  
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**13 Disposal considerations**

- **Product:**
- **Recommendation**  
 Dispose of waste in accordance to applicable national, regional, or local regulations.  
 Flush pipes with water frequently if discarding solutions containing sodium azide into metal piping systems.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **DOT regulations:**
- **Hazard class:** -
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

· **Transport/Additional information:** Not dangerous according to the above specifications.

DUS

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**Material Safety Data Sheet**

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**Trade name: IgG/IgM Conjugates**

(Contd. of page 4)

**15 Regulations**

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

All ingredients are listed.

· **Section 313 (40CFR372.65):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Markings according to EU guidelines:**

Observe the general safety regulations when handling chemicals

The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).

· **National regulations**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**16 Other information:**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· **\* Data compared to the previous version altered.**

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Wash Buffer Concentrate (16X)
- **Catalog or product number:** R3
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with non-hazardous additions.

· <b>Listing of dangerous and non-hazardous components:</b>		
26628-22-8	sodium azide	T+, N; R 28-32-50/53 0.1-1.0%

- **Additional information** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:**  
Xn Harmful
- **Routes of exposure:** Ingestion
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
R 22 Harmful if swallowed.  
R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

**4 First aid measures**

- **General information**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing**  
Rinse mouth with water. Seek medical attention and appropriate follow-up.

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**Trade name: Wash Buffer Concentrate (16X)**

Immediately call a doctor.

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**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** No special measures required.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

**26628-22-8 sodium azide**

REL (United States)	Short-term value: C 0.3** mg/m <sup>3</sup> , C 0.1* ppm *as HN3 vapor; **as NaN3; Skin
TLV (United States)	Short-term value: C 0.29** mg/m <sup>3</sup> , C 0.11* ppm *as HN3 vapor **as NaN3

- **Additional information:** The lists that were valid during the creation were used as basis.

- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:** Protective gloves.
- **Material of gloves** Synthetic gloves

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Reviewed on 10/21/2009

**Trade name: Wash Buffer Concentrate (16X)**

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- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **pH-value at 20°C:** 7.4

· **Solvent content:**

**Organic solvents:** 0.0 %

**Solids content:** 100.0 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions**  
This product contains sodium azide. Sodium azide can react with copper, brass, lead, and solder in piping systems to form explosive compounds of lead azide and copper azide.
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritant effect.
- **Sensitization:** No sensitizing effects known.

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## Material Safety Data Sheet

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Trade name: Wash Buffer Concentrate (16X)

(Contd. of page 3)

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

**12 Ecological information:**· **Ecotoxicological effects:**

· **Remark:** Harmful to fish

· **Additional ecological information:**· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Harmful to aquatic organisms

**13 Disposal considerations**· **Product:**· **Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Flush pipes with water frequently if discarding solutions containing sodium azide into metal piping systems.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**· **DOT regulations:**

· **Hazard class:** -

· **Land transport ADR/RID (cross-border)**

· **ADR/RID class:** -

· **Maritime transport IMDG:**

· **IMDG Class:** -

· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** -

**15 Regulations**

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

All ingredients are listed.

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## Material Safety Data Sheet

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Trade name: Wash Buffer Concentrate (16X)

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· **Section 313 (40CFR372.65):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

Xn Harmful

· **Hazard-determining components of labelling:**

sodium azide

· **Risk phrases:**

22 Harmful if swallowed.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

46 If swallowed, seek medical advice immediately and show this container or label.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

· **National regulations**· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**16 Other information:**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environmental Health and Safety.· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· \* **Data compared to the previous version altered.**

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Sample Diluent Concentrate B
- **Catalog or product number:** R2/FAID130
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with non-hazardous additions.

· <b>Listing of dangerous and non-hazardous components:</b>		
26628-22-8	sodium azide	T+, N; R 28-32-50/53 0.1-1.0%

- **Additional information** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:**  
Xn Harmful
- **Routes of exposure:** Ingestion
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
R 22 Harmful if swallowed.  
R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **NFPA ratings (scale 0-4)**  
Health = 2  
Fire = 0  
Reactivity = 0

**4 First aid measures**

- **General information**  
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.

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**Material Safety Data Sheet**

Printing date 04/05/2010

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**Trade name: Sample Diluent Concentrate B**

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- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing**  
Rinse mouth with water. Seek medical attention and appropriate follow-up.  
Immediately call a doctor.
- **Information for doctor**
- **The following symptoms may occur:**  
Skin irritation  
Eye irritation

**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** Wear fully protective suit.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to item 13.

**7 Handling and storage**

- **Handling**
- **Information for safe handling:** No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** According to product specification
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.

- **Components with limit values that require monitoring at the workplace:**

**26628-22-8 sodium azide**

REL (United States)	Short-term value: C 0.3** mg/m <sup>3</sup> , C 0.1* ppm *as HN3 vapor; **as NaN3; Skin
TLV (United States)	Short-term value: C 0.29** mg/m <sup>3</sup> , C 0.11* ppm *as HN3 vapor **as NaN3

- **Additional information:** The lists that were valid during the creation were used as basis.

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**Material Safety Data Sheet**

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**Trade name: Sample Diluent Concentrate B**

(Contd. of page 2)

- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	liquid
<b>Color:</b>	Red
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **pH-value at 20°C:** 7.4

· **Solvent content:**

**Organic solvents:** 0.0 %

**Solids content:** 100.0 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

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## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

Trade name: Sample Diluent Concentrate B

(Contd. of page 3)

· **Materials to be avoided:**· **Dangerous reactions**

This product contains sodium azide. Sodium azide can react with copper, brass, lead, and solder in piping systems to form explosive compounds of lead azide and copper azide.

· **Dangerous products of decomposition:** No dangerous decomposition products known\* **11 Toxicological information**· **Acute toxicity:**· **Primary irritant effect:**· **on the skin:** No irritant effect.· **on the eye:** No irritant effect.· **Sensitization:** No sensitizing effects known.· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

\* **12 Ecological information:**· **Ecotoxicological effects:**· **Remark:** Harmful to fish· **Additional ecological information:**· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Harmful to aquatic organisms

\* **13 Disposal considerations**· **Product:**· **Recommendation**

Dispose of waste in accordance to applicable national, regional, or local regulations.

Flush pipes with water frequently if discarding solutions containing sodium azide into metal piping systems.

· **Uncleaned packagings:**· **Recommendation:** Disposal must be made according to official regulations.· **Recommended cleansing agent:** Water, if necessary with cleansing agents.\* **14 Transport information**· **DOT regulations:**· **Hazard class:** -· **Land transport ADR/RID (cross-border)**· **ADR/RID class:** -

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**Material Safety Data Sheet**

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**Trade name: Sample Diluent Concentrate B**

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· **Maritime transport IMDG:**

· **IMDG Class:** -

· **Marine pollutant:** No

· **Air transport ICAO-TI and IATA-DGR:**

· **ICAO/IATA Class:** -

**15 Regulations**

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

All ingredients are listed.

· **Section 313 (40CFR372.65):**

All ingredients are listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

Xn Harmful

· **Hazard-determining components of labelling:**

sodium azide

· **Risk phrases:**

22 Harmful if swallowed.

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

· **Safety phrases:**

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

46 If swallowed, seek medical advice immediately and show this container or label.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

· **National regulations**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Sample Diluent Concentrate B**

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**16 Other information:**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS:** Environmental Health and Safety.

· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· \* **Data compared to the previous version altered.**

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## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Stop Solution
- **Catalog or product number:** R6
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547  
1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with non-hazardous additions.

· **Listing of dangerous and non-hazardous components:**

7732-18-5	water		50-100%
60-00-4	ethylenediaminetetraacetic acid	Xi; R 36	2.5-5%
497-19-8	sodium carbonate	Xi; R 36	2.5-5%
1135-40-6	3-Cyclohexylaminopropan-1-sulfonsäure	Xn; R 21/22	1.0-2.5%

- **Additional information** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:**  
Irritant to eyes.  
Irritant to skin.  
Irritant to respiratory system and skin.  
Xi Irritant
- **Routes of exposure:** Skin
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
R 36/38 Irritating to eyes and skin.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **NFPA ratings (scale 0-4)**  
Health = 1  
Fire = 0  
Reactivity = 0

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(Contd. on page 2)

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

Trade name: Stop Solution

(Contd. of page 1)

**4 First aid measures**

- **General information** Seek medical treatment.
- **After inhalation**  
Supply fresh air.  
Seek medical treatment.  
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing** Rinse mouth with water. Seek medical attention and appropriate follow-up.
- **Information for doctor**
- **The following symptoms may occur:** Skin irritation

**5 Fire fighting measures**

- **Suitable extinguishing agents**  
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** Wear fully protective suit.

**6 Accidental release measures**

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:**  
Dilute with plenty of water.  
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Dispose of the collected material according to regulations.  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

**7 Handling and storage**

- **Handling**
- **Information for safe handling:**  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.

**8 Exposure controls and personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

(Contd. on page 3)

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**Material Safety Data Sheet**

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Reviewed on 10/21/2009

**Trade name: Stop Solution**

(Contd. of page 2)

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
 Keep away from foodstuffs, beverages and feed.  
 Immediately remove all soiled and contaminated clothing  
 Wash hands before breaks and at the end of work.  
 Avoid contact with the eyes and skin.
- **Breathing equipment:** Suitable respiratory protective device recommended.
- **Protection of hands:** Protective gloves.
- **Material of gloves:** Synthetic gloves
- **Penetration time of glove material**  
 The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
 Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
 Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:**  
 Safety glasses  
 Tightly sealed goggles.
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	Colorless
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** undetermined

· **Flash point:** Not applicable

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Vapor pressure at 20°C:** 23 hPa

· **Density:** Not determined

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **pH-value at 20°C:** 9-11

· **Solvent content:**

<b>Organic solvents:</b>	0.0 %
<b>Water:</b>	87.7 %

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**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Stop Solution**

(Contd. of page 3)

**Solids content:** 100.0 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

· **Acute toxicity:**

· **LD/LC50 values for hazardous components per OSHA criteria:**

**60-00-4 ethylenediaminetetraacetic acid**

Oral	LD50	4500 mg/kg (rat)
------	------	------------------

**497-19-8 sodium carbonate**

Oral	LD50	4000 mg/kg (rat)
------	------	------------------

**1310-73-2 sodium hydroxide**

Oral	LD50	2000 mg/kg (rat)
------	------	------------------

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritant effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

· **Target organs:**

Skin.

Eye.

**12 Ecological information:**

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

**13 Disposal considerations**

· **Product:**

· **Recommendation** Dispose of waste in accordance to applicable national, regional, or local regulations.

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**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 10/21/2009

**Trade name: Stop Solution**

(Contd. of page 4)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

**14 Transport information**

- **DOT regulations:**
- **Hazard class:** 8
- **Identification number:** UN1824
- **Packing group:** III
- **Proper shipping name (technical name):** SODIUM HYDROXIDE SOLUTION, mixture
- **Label:** 8
- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** 8 Corrosive substances
- **Danger code (Kemler):** 80
- **UN-Number:** 1824
- **Packing group:** III
- **Label:** 8
- **Description of goods:** 1824 SODIUM HYDROXIDE SOLUTION, mixture
- **Maritime transport IMDG:**
- **IMDG Class:** 8
- **UN Number:** 1824
- **Label:** 8
- **Packing group:** III
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Proper shipping name:** SODIUM HYDROXIDE SOLUTION, mixture
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 8
- **UN/ID Number:** 1824
- **Label:** 8
- **Packing group:** III
- **Proper shipping name:** SODIUM HYDROXIDE SOLUTION, mixture

**15 Regulations**

· **SARA (Superfund Amendants and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

None of the ingredients is listed.

· **Section 313 (40CFR372.65):**

None of the ingredients is listed.

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

(Contd. on page 6)

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 10/21/2009

Trade name: Stop Solution

(Contd. of page 5)

· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Markings according to EU guidelines:**

Observe the general safety regulations when handling chemicals

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

Xi Irritant

· **Risk phrases:**

36/38 Irritating to eyes and skin.

· **Safety phrases:**

25 Avoid contact with eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

60 This material and its container must be disposed of as hazardous waste.

· **National regulations**· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.**16 Other information:**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environmental Health and Safety.· **Contact:**

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

· \* **Data compared to the previous version altered.**



## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 11/13/2009

**1 Identification of substance:**

- **Product details:**
- **Trade name:** Substrate
- **Catalog or product number:** R5
- **Application of the substance / the preparation** In-vitro laboratory reagent or component
- **Manufacturer/Supplier:**  
Bio-Rad Laboratories, Diagnostic Group  
4000 Alfred Nobel Drive  
Hercules, California 94547 1(510)724-7000
- **Information department:** Technical services, customer support.
- **Emergency information:**  
1(800) 424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION, or ACCIDENT.

**2 Composition/Information on components:**

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with non-hazardous additions.

· <b>Listing of dangerous and non-hazardous components:</b>			
111-42-2	2,2'-iminodiethanol	Xn, Xi; R 22-38-41-48/22	2.5-5%

- **Additional information** For the wording of the listed risk phrases refer to section 15.

**3 Hazards identification**

- **Emergency overview:**  
Irritant to eyes.  
Xi Irritant
- **Information pertaining to particular dangers for man and environment**  
The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.  
R 36 Irritating to eyes.
- **Classification system**  
The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.  
The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.
- **NFPA ratings (scale 0-4)**  
Health = 1  
Fire = 1  
Reactivity = 0

**4 First aid measures**

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing** Rinse mouth with water. Seek medical attention and appropriate follow-up.

(Contd. on page 2)

## Material Safety Data Sheet

Printing date 04/05/2010

Reviewed on 11/13/2009

Trade name: Substrate

(Contd. of page 1)

- **Information for doctor**
- **The following symptoms may occur:**  
Skin irritation  
Nausea

## 5 Fire fighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **Special hazards caused by the material, its products of combustion or resulting gases:**  
Formation of toxic gases is possible during heating or in case of fire.
- **Protective equipment:** Wear fully protective suit.

## 6 Accidental release measures

- **Person-related safety precautions:** Not required
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**  
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

## 7 Handling and storage

- **Handling**
- **Information for safe handling:**  
Avoid splashes or spray in enclosed areas.  
No special measures required.  
No special precautions are necessary if used correctly.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** Store only in the original receptacle.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.

## 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Breathing equipment:** Use suitable respiratory protective device in case of insufficient ventilation.

(Contd. on page 3)

**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 11/13/2009

**Trade name: Substrate**

(Contd. of page 2)

- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Protective gloves.
- **Material of gloves** Synthetic gloves
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **For the permanent contact in work areas without heightened risk of injury (e.g. Laboratory) gloves made of the following material are suitable:**  
Synthetic gloves
- **For the permanent contact gloves made of the following materials are suitable:** Synthetic gloves
- **For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**  
Synthetic gloves
- **As protection from splashes gloves made of the following materials are suitable:** Synthetic gloves
- **Eye protection:**  
Safety glasses  
Tightly sealed goggles.
- **Body protection:** Protective work clothing.

**9 Physical and chemical properties:**

· **General Information**

<b>Form:</b>	Liquid
<b>Color:</b>	Light yellow
<b>Odor:</b>	Odorless

· **Change in condition**

**Melting point/Melting range:** undetermined  
**Boiling point/Boiling range:** 0°C

· **Flash point:** > 55°C

· **Ignition temperature:** 370°C

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Density:** Not determined

· **Solubility in / Miscibility with**

**Water:** Fully miscible

· **pH-value at 20°C:** 7-8

· **Solvent content:**

**Organic solvents:** 5.0 %

**Solids content:** 90.0 %

**10 Stability and reactivity**

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Materials to be avoided:**
- **Dangerous reactions** No dangerous reactions known

(Contd. on page 4)

**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 11/13/2009

**Trade name: Substrate**

(Contd. of page 3)

· **Dangerous products of decomposition:** No dangerous decomposition products known

**11 Toxicological information**

· **Acute toxicity:**

· **LD/LC50 values for hazardous components per OSHA criteria:**

**111-42-2 2,2'-iminodiethanol**

Oral	LD50	1600 mg/kg (rat)
Dermal	LD50	12200 mg/kg (rbt)

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritant effect.

· **Sensitization:** No sensitizing effects known.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Irritant

· **Target organs:** Eye.

**12 Ecological information:**

· **Additional ecological information:**

· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water.

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

**13 Disposal considerations**

· **Product:**

· **Recommendation** Dispose of waste in accordance to applicable national, regional, or local regulations.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

· **DOT regulations:**

· **Hazard class:** -

· **Land transport ADR/RID (cross-border)**

· **ADR/RID class:** -

· **Maritime transport IMDG:**

· **IMDG Class:** -

(Contd. on page 5)

**Material Safety Data Sheet**

Printing date 04/05/2010

Reviewed on 11/13/2009

**Trade name: Substrate**

(Contd. of page 4)

- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

**15 Regulations**

· **SARA (Superfund Amendments and Reauthorization Act of 1986 - USA)**

· **Section 302/304 (40CFR355.30 / 40CFR355.40):**

None of the ingredients is listed.

· **Section 313 (40CFR372.65):**

111-42-2	2,2'-iminodiethanol
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· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

111-42-2	2,2'-iminodiethanol	3
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Markings according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials

· **Code letter and hazard designation of product:**

Xi Irritant

· **Risk phrases:**

36 Irritating to eyes.

· **Safety phrases:**

25 Avoid contact with eyes.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
NK	2.5-5

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.

**16 Other information:**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Environmental Health and Safety.

(Contd. on page 6)

**Material Safety Data Sheet**

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**Trade name: Substrate**

(Contd. of page 5)

**· Contact:**

*Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000*

*Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000*

**· \* Data compared to the previous version altered.**

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