

02/27/2004

Kit components

Product code	Description
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559302	Human Intracellular Cytokine Staining Start
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Components:

559302a	BD PharMingen Stain Buffer (FBS)(20151Z)
559302b	BD Cytfx/Cytprm Fxtn & Permtn Soln(51-2090KE)
559302c	Perm/Wash Buffer (51-2091KE)
559302d	PE Conjugated Anti-Human IL-2 (51-18955Z)
559302e	PE Labeled Anti-Human IFN-gamma (51-20665Z)
559302f	PE Labeled Anti-Human TNF (51-18645Z)
559302g	PE Labeled Human Isotype Control Cocktail
559302h	Human Purified Antibody Blocking Cocktail
559302i	Leukocyte Activation Cocktail (51-20421E)
559302j	Hick-1 Cytokine Positive Control Cells 23261Z

1 Identification of substance:

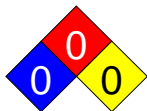
- **Product name:** *BD PharMingen Stain Buffer (FBS)(51-20151Z)*
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
Not applicable
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **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** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** Immediately call a doctor.

(Contd. on page 2)

USA

Product name: BD PharMingen Stain Buffer (FBS)(51-20151Z)
(Human Intracellular Cytokine Staining Starter Kit)

· **Information for doctor** Show this label.

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **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:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

(Contd. on page 3)

Product name: BD PharMingen Stain Buffer (FBS)(51-20151Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· General Information

Form: Liquid
Color: Clear
Odor: Characteristic

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with Water:** Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· Materials to be avoided:

Incompatible materials: acidic material and metals

Incompatible material: strong oxidizers.

· **Dangerous reactions** No dangerous reactions known

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

· Additional information:

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.

11 Toxicological information

· Acute toxicity:

· Primary irritant effect:

· **on the skin:** No irritating effect.

· **on the eye:** No irritating effect.

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

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Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: BD PharMingen Stain Buffer (FBS)(51-20151Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

· 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.

12 Ecological information:

· Ecotoxicological effects:

· Other information:

The ecological effects have not been thoroughly investigated, but currently none have been identified.

· General notes: *Generally not hazardous for water.*

13 Disposal considerations

· Product:

· Recommendation

Smaller quantities can be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

· Uncleaned packagings:

· Recommendation: *Disposal must be made according to state and federal 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:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

· SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

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Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: BD PharMingen Stain Buffer (FBS)(51-20151Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

9048-46-8	BSA
7558-79-4	sodium phosphate, dibasic
26628-22-8	sodium azide
7778-77-0	potassium phosphate, monobasic
7447-40-7	potassium chloride

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

26628-22-8	sodium azide	A4
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· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

Observe the general safety regulations when handling chemicals
The product is not subject to identification regulations pertaining to regulations on hazardous materials.

· National regulations

· Water hazard class: Generally not hazardous for water.

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: Safety and Environment Department

· Contact: Technical Service Representative

1 Identification of substance:

- **Product name:** BD Cytofix/Cytoperm Fixation and Permeabilization Solution (51-2090KE)
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

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

Dangerous components:

30525-89-4	Paraformaldehyde	4.0%
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3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment**

R 40 Limited evidence of a carcinogenic effect.

R 43 May cause sensitization by skin contact.

- **Classification system**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

- **NFPA ratings (scale 0-4)**



Health = 2

Fire = 0

Reactivity = 0

4 First aid measures

- **After inhalation**
Supply fresh air and seek medical advice.
In case of unconsciousness place patient on 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.

(Contd. on page 2)

USA



Printing date 02/27/2004

Reviewed on 07/25/2003

**Product name: BD Cytofix/Cytoperm Fixation and Permeabilization Solution (51-2090KE)
(Human Intracellular Cytokine Staining Starter Kit)**

(Contd. of page 1)

· **After swallowing** If symptoms persist consult doctor.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:**
During heating or in case of fire toxic gases may be produced.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Person-related safety precautions:** Not required.
- **Measures for environmental protection:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Ensure adequate ventilation.

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

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:**

30525-89-4 Paraformaldehyde

PEL	Short-term value: 2 ppm Long-term value: 0.75 ppm see 29 CFR 1910.1048
REL	Short-term value: C.01* ppm Long-term value: 0.016 ppm *15-min
TLV	Short-term value: C.037 mg/m ³ , C.03 ppm
SEN	

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

(Contd. on page 3)

Product name: BD Cytofix/Cytoperm Fixation and Permeabilization Solution (51-2090KE)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

- **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.
- **Breathing equipment:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· General Information

Form: Liquid
Color: Clear
Odor: Like aldehyde

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

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

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

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· Solubility in / Miscibility with

Water: Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Materials to be avoided:** Incompatible material: strong oxidizers.
- **Dangerous reactions** No dangerous reactions known
- **Dangerous products of decomposition:**
Carbon dioxide (CO₂)

(Contd. on page 4)

Product name: BD Cytofix/Cytoperm Fixation and Permeabilization Solution (51-2090KE)
(Human Intracellular Cytokine Staining Starter Kit)

Formaldehyde

(Contd. of page 3)

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

30525-89-4 Paraformaldehyde

Oral	LD50	592 mg/kg (rat)
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Dermal	LD50	500 mg/kg (rbt)
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· **Primary irritant effect:**

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

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· **Subacute to chronic toxicity:** Target organs: respiratory system

· **Additional toxicological information:**

Harmful

Irritant

The product shows the following dangers according to internally approved calculation methods for preparations:

California Proposition 65 - Warning: This product contains a chemical known to the State of California to cause cancer.

12 Ecological information:

· **Ecotoxicological effects:**

· **Other information:**

The ecological effects have not been thoroughly investigated, but currently none have been identified.

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

13 Disposal considerations

· **Product:**

· **Recommendation**

Must not be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made according to state and federal regulations.

14 Transport information

· **DOT regulations:**

· **Hazard class:** -

(Contd. on page 5)



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 07/25/2003

Product name: BD Cytofix/Cytoperm Fixation and Permeabilization Solution (51-2090KE)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

- **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:**

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

- **SARA Section 355 (extremely hazardous substances)**

30525-89-4 | Paraformaldehyde

- **SARA Section 313 (specific toxic chemical listings)**

30525-89-4 | Paraformaldehyde

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

30525-89-4 | Paraformaldehyde

- **California Proposition 65 - Chemicals known to cause cancer**

Formaldehyde is toxic, allergenic, and is known to the state of California to cause cancer. Note: Formaldehyde poses a cancer threat through inhalation of the gas or vapor. Forseeable use of this product does not pose a known cancer threat, since it contains paraformaldehyde and in the liquid, not gaseous form.

30525-89-4 | Paraformaldehyde

- **California Proposition 65 - Chemicals known to cause reproductive toxicity**

None of the ingredients is listed.

- **Carcinogenicity categories**

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

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

- **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

- **Product related hazard informations:**

The product has been classified and marked in accordance with regulations on hazardous materials.

(Contd. on page 6)

**Material Safety Data Sheet**
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 07/25/2003

Product name: BD Cytofix/Cytoperm Fixation and Permeabilization Solution (51-2090KE)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 5)

· Hazard symbols:*Xn Harmful***· Hazard-determining components of labelling:***Paraformaldehyde***· Risk phrases:***40 Limited evidence of a carcinogenic effect.**43 May cause sensitization by skin contact.***· Safety phrases:***2 Keep out of the reach of children.**13 Keep away from food, drink and animal feedingstuffs.**36/37 Wear suitable protective clothing and gloves.**46 If swallowed, seek medical advice immediately and show this container or label.***· National regulations****· Technical instructions (air):**

Class	Share in %
I	4.0

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

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: *Safety and Environment Department***· Contact:** *Technical Service Representative*

USA

1 Identification of substance:

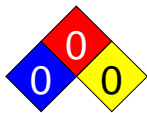
- **Product name:** *Perm/Wash Buffer (51-2091KE)*
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
Not applicable
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **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** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** If symptoms persist consult doctor.

(Contd. on page 2)

USA

Product name: Perm/Wash Buffer (51-2091KE)
(Human Intracellular Cytokine Staining Starter Kit)

· **Information for doctor** Show this label.

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **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:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

(Contd. on page 3)

Product name: Perm/Wash Buffer (51-2091KE)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· General Information

Form: Liquid
Color: Gold
Odor: Characteristic

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with Water:** Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· Materials to be avoided:

Incompatible materials: acidic material and metals

Incompatible material: strong oxidizers.

· **Dangerous reactions** No dangerous reactions known

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

· Additional information:

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.

11 Toxicological information

· Acute toxicity:

· Primary irritant effect:

· **on the skin:** No irritating effect.

· **on the eye:** No irritating effect.

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

(Contd. on page 4)

USA



Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: Perm/Wash Buffer (51-2091KE)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

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.

12 Ecological information:

Ecotoxicological effects:**Other information:**

The ecological effects have not been thoroughly investigated, but currently none have been identified.

General notes: Generally not hazardous for water.

13 Disposal considerations

Product:**Recommendation**

Smaller quantities can be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

Uncleaned packagings:

Recommendation: Disposal must be made according to state and federal 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:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

(Contd. on page 5)



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Product name: Perm/Wash Buffer (51-2091KE)
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(Contd. of page 4)

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

26628-22-8 | sodium azide

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

26628-22-8 | sodium azide | A4

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

Observe the general safety regulations when handling chemicals

The product is not subject to identification regulations pertaining to regulations on hazardous materials.

· National regulations

· Water hazard class: Generally not hazardous for water.

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: Safety and Environment Department

· Contact: Technical Service Representative

1 Identification of substance:

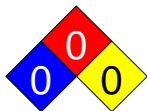
- **Product name:** *PE Conjugated Anti-Human IL-2 (51-18955Z)*
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
Not applicable
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 0
Fire = 0
Reactivity = 0

4 First aid measures

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** If symptoms persist consult doctor.

Product name: PE Conjugated Anti-Human IL-2 (51-18955Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **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**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses

(Contd. on page 3)

USA

Product name: PE Conjugated Anti-Human IL-2 (51-18955Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

· **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· General Information

Form: Liquid
Color: Clear
Odor: Characteristic

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with Water:** Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· Materials to be avoided:

Incompatible materials: acidic material and metals
Incompatible material: strong oxidizers.

· **Dangerous reactions** No dangerous reactions known

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

· Additional information:

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.

11 Toxicological information

· Acute toxicity:

· Primary irritant effect:

· **on the skin:** No irritating effect.

· **on the eye:** No irritating effect.

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

(Contd. on page 4)



Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Conjugated Anti-Human IL-2 (51-18955Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

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.

12 Ecological information:**Ecotoxicological effects:****Other information:**

The ecological effects have not been thoroughly investigated, but currently none have been identified.

General notes: Generally not hazardous for water.

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

Smaller quantities can be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

Uncleaned packagings:

Recommendation: Disposal must be made according to state and federal 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:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations**SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

(Contd. on page 5)



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Conjugated Anti-Human IL-2 (51-18955Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

26628-22-8 | sodium azide

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

26628-22-8 | sodium azide | A4

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

The product has been classified and marked in accordance with regulations on hazardous materials.

· National regulations

· Water hazard class: Generally not hazardous for water.

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: Safety and Environment Department

· Contact: Technical Service Representative

1 Identification of substance:

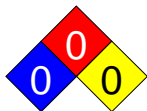
- **Product name:** PE Labeled Anti-Human IFN-gamma (51-20665Z)
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
Not applicable
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 0
Fire = 0
Reactivity = 0

4 First aid measures

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** If symptoms persist consult doctor.

Product name: PE Labeled Anti-Human IFN-gamma (51-20665Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **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**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses

(Contd. on page 3)

Product name: PE Labeled Anti-Human IFN-gamma (51-20665Z)
(Human Intracellular Cytokine Staining Starter Kit)

· **Body protection:** Protective work clothing (lab coat).

(Contd. of page 2)

9 Physical and chemical properties:

· General Information

Form:	Liquid
Color:	Clear
Odor:	Characteristic

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with Water:** Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· Materials to be avoided:

Incompatible materials: acidic material and metals
Incompatible material: strong oxidizers.

· **Dangerous reactions** No dangerous reactions known

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

· Additional information:

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.

11 Toxicological information

· Acute toxicity:

· Primary irritant effect:

· **on the skin:** No irritating effect.

· **on the eye:** No irritating effect.

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

(Contd. on page 4)



Material Safety Data Sheet

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Printing date 02/27/2004

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Product name: PE Labeled Anti-Human IFN-gamma (51-20665Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

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.

12 Ecological information:

Ecotoxicological effects:**Other information:**

The ecological effects have not been thoroughly investigated, but currently none have been identified.

General notes: Generally not hazardous for water.

13 Disposal considerations

Product:**Recommendation**

Smaller quantities can be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

Uncleaned packagings:

Recommendation: Disposal must be made according to state and federal 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:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

(Contd. on page 5)



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Labeled Anti-Human IFN-gamma (51-20665Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

26628-22-8 | sodium azide

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

26628-22-8 | sodium azide | A4

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

The product has been classified and marked in accordance with regulations on hazardous materials.

· National regulations

· Water hazard class: Generally not hazardous for water.

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: Safety and Environment Department

· Contact: Technical Service Representative

1 Identification of substance:

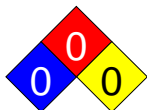
- **Product name:** *PE Labeled Anti-Human TNF (51-18645Z)*
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 0
Fire = 0
Reactivity = 0

4 First aid measures

- **General information** No special measures required.
- **After inhalation** Seek medical treatment in case of complaints.
- **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** If symptoms persist consult doctor.
- **Information for doctor** Show this label.

Product name: PE Labeled Anti-Human TNF (51-18645Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
- **Additional information:** No dangerous substances are released.

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

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:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses

(Contd. on page 3)

USA

Product name: PE Labeled Anti-Human TNF (51-18645Z)
(Human Intracellular Cytokine Staining Starter Kit)

· **Body protection:** Protective work clothing (lab coat).

(Contd. of page 2)

9 Physical and chemical properties:

· General Information

Form: Liquid
Color: Pink
Odor: Characteristic

· **Change in condition:** Undetermined
· **Melting point/Melting range:** Not determined
· **Boiling point/Boiling range:** Not determined

· **Flash point:** Not applicable

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

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with Water:** Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Materials to be avoided:**

Incompatible material: strong oxidizers.

Incompatible materials: acidic material and metals

· **Dangerous reactions:** No dangerous reactions known

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

· **Additional information:**

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.

11 Toxicological information

· **Acute toxicity:**

· **Primary irritant effect:**

· **on the skin:** No irritating effect.

· **on the eye:** No irritating effect.

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

(Contd. on page 4)



Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Labeled Anti-Human TNF (51-18645Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

· Additional toxicological information:

The product is not subject to OSHA classification according to internally approved calculation methods for preparations.

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.

12 Ecological information:

· Ecotoxicological effects:

· Other information:

The ecological effects have not been thoroughly investigated, but currently none have been identified.

· General notes: *Generally not hazardous for water.*

13 Disposal considerations

· Product:

· Recommendation

Smaller quantities can be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

· Uncleaned packagings:

· Recommendation: *Disposal must be made according to state and federal 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:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

USA

(Contd. on page 5)



Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Labeled Anti-Human TNF (51-18645Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

15 Regulations

· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **SARA Section 313 (specific toxic chemical listings)**

None of the ingredients is listed.

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

26628-22-8 sodium azide

· **California Proposition 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause reproductive toxicity**

None of the ingredients is listed.

· **Carcinogenicity categories**

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

26628-22-8 sodium azide A4

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **Product related hazard informations:**

Observe the general safety regulations when handling chemicals

The product is not subject to identification regulations pertaining to regulations on hazardous materials.

· **National regulations**

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

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· **Department issuing MSDS:** Safety and Environment Department

· **Contact:** Technical Service Representative

1 Identification of substance:

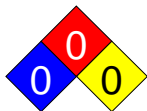
- **Product name:** PE Labeled Human Isotype Control Cocktail (51-20405Z)
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
Not applicable
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 0
Fire = 0
Reactivity = 0

4 First aid measures

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** If symptoms persist consult doctor.

Product name: PE Labeled Human Isotype Control Cocktail (51-20405Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **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**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses

(Contd. on page 3)

USA

Product name: PE Labeled Human Isotype Control Cocktail (51-20405Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

· **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· General Information

Form: Liquid
Color: Clear
Odor: Characteristic

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with Water:** Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· Materials to be avoided:

Incompatible materials: acidic material and metals
Incompatible material: strong oxidizers.

· **Dangerous reactions** No dangerous reactions known

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

· Additional information:

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.

11 Toxicological information

· Acute toxicity:

· Primary irritant effect:

· **on the skin:** No irritating effect.

· **on the eye:** No irritating effect.

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

(Contd. on page 4)

USA



Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Labeled Human Isotype Control Cocktail (51-20405Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

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.

12 Ecological information:

Ecotoxicological effects:

Other information:

The ecological effects have not been thoroughly investigated, but currently none have been identified.

General notes: Generally not hazardous for water.

13 Disposal considerations

Product:

Recommendation

Smaller quantities can be disposed of with solid waste.

Dispose of material in accordance with federal (40 CFR 261), state and local requirements.

This product is not considered a RCRA hazardous waste.

Uncleaned packagings:

Recommendation: Disposal must be made according to state and federal 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:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

(Contd. on page 5)



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: PE Labeled Human Isotype Control Cocktail (51-20405Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

26628-22-8 | sodium azide

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

26628-22-8 | sodium azide | A4

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

The product has been classified and marked in accordance with regulations on hazardous materials.

· National regulations

· Water hazard class: Generally not hazardous for water.

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: Safety and Environment Department

· Contact: Technical Service Representative

1 Identification of substance:

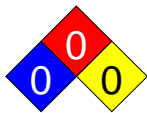
- **Product name:** Human Purified Antibody Blocking Cocktail (51-20401Z)
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**
Not applicable
- **Chemical characterization**
- **Description:** Mixture of the substances listed below with nonhazardous additions.
- **Dangerous components:** Void

3 Hazards identification

- **Hazard description:**
This product contains no hazardous constituents, or the concentration of all chemical constituents are below the regulatory threshold limits described by Occupational Safety Health Administration Hazard Communication Standard 29 CFR 1910.1200 and the European Directive 91/155/EEC, and 93/112/EC.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **NFPA ratings (scale 0-4)**



Health = 0
Fire = 0
Reactivity = 0

4 First aid measures

- **General information**
Symptoms of poisoning may even occur after several hours; therefore provide medical observation for at least 48 hours after the accident.
- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** Immediately call a doctor.

(Contd. on page 2)

USA

Product name: Human Purified Antibody Blocking Cocktail (51-20401Z)
(Human Intracellular Cytokine Staining Starter Kit)

· **Information for doctor** Show this label.

(Contd. of page 1)

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
- **Additional information:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Information for safe handling:** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** 4 C
- **Information about storage in one common storage facility:**
Do not store together with oxidizing and acidic materials as well as heavy-metal compounds.
- **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**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
- **Breathing equipment:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.

(Contd. on page 3)

Product name: Human Purified Antibody Blocking Cocktail (51-20401Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

· **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· **General Information**

Form:	Liquid
Color:	Clear
Odor:	Characteristic

· **Change in condition**

Melting point/Melting range: Not determined

Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Danger of explosion:** Forms very sensitive explosive metallic compounds.

· **Vapor pressure:** Not applicable

· **Density:** Not determined

· **Solubility in / Miscibility with**

Water: Soluble

· **pH-value:** Not applicable

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:**

No decomposition if used according to specifications.

· **Materials to be avoided:**

Incompatible materials: acidic material and metals

Incompatible material: strong oxidizers.

· **Dangerous reactions** No dangerous reactions known

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

· **Additional information:**

Sodium azide is present in this product. Contact with acidic solutions and metal compounds over time may form potentially explosive metal azides. Should any of this material be introduced into a sanitary sewer system, flush with copious amounts of water.



Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 04/30/2003

Product name: Human Purified Antibody Blocking Cocktail (51-20401Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

11 Toxicological information

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

12 Ecological information:

- **Ecotoxicological effects:**
- **Other information:**
The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** Generally not hazardous for water.

13 Disposal considerations

- **Product:**
- **Recommendation**
Smaller quantities can be disposed of with solid waste.
Dispose of material in accordance with federal (40 CFR 261), state and local requirements.
This product is not considered a RCRA hazardous waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to state and federal 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:** -

(Contd. on page 5)

USA



Material Safety Data Sheet
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Product name: Human Purified Antibody Blocking Cocktail (51-20401Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

· Transport/Additional information:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

· SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

26628-22-8 | sodium azide

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

26628-22-8 | sodium azide | A4

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

The product has been classified and marked in accordance with regulations on hazardous materials.

· National regulations

· Water hazard class: Generally not hazardous for water.

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· Department issuing MSDS: Safety and Environment Department

· Contact: Technical Service Representative

1 Identification of substance:

- **Product name:** *Leukocyte Activation Cocktail (51-20421E)*
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture consisting of the following components.

Dangerous components:

67-68-5	dimethyl sulfoxide	61.0%
20350-15-6	Brefeldin A	6.0%

3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment**
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **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 provide medical observation for at least 48 hours after the accident.
- **After inhalation**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek medical advice.

(Contd. on page 2)

Product name: Leukocyte Activation Cocktail (51-20421E)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 1)

- In case of unconsciousness place patient on side position for transportation.*
- After skin contact Immediately wash with water and soap and rinse thoroughly.*
- After eye contact Rinse opened eye for 15 minutes under running water. Then consult a doctor.*
- After swallowing If symptoms persist consult doctor.*
- Information for doctor Show this label.*

5 Fire fighting measures

- Suitable extinguishing agents*
CO₂, ABC multipurpose dry chemical 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: Wipe up with damp sponge or mop.*
- Measures for cleaning/collecting:*
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- Additional information:*
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- Handling*
· Information for safe handling: Ensure good ventilation/exhaustion at the workplace.
· Information about protection against explosions and fires: No special measures required.
- Storage*
· Requirements to be met by storerooms and receptacles: -80 C
· Information about storage in one common storage facility: Store away from oxidizing agents.
· Further information about storage conditions: Store in cool, dry conditions in well sealed containers.

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.*

(Contd. on page 3)

Product name: Leukocyte Activation Cocktail (51-20421E)
(Human Intracellular Cytokine Staining Starter Kit)

(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.
Avoid contact with the eyes and skin.
- **Breathing equipment:**
In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.
- **Protection of hands:**



Chemical resistant gloves (i.e. nitrile, or equivalent).

- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing (lab coat).

9 Physical and chemical properties:

· **General Information**

Form: Liquid
Color: Colorless
Odor: Odorless

· **Change in condition**

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· **Flash point:** Not applicable

· **Ignition temperature:** 270.0°C (518°F)

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

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

· **Explosion limits:**

Lower: 1.8 Vol %

· **Density:** Not determined

· **Solubility in / Miscibility with Water:**

Not miscible or difficult to mix

· **pH-value:** Not applicable

· **Solvent content:**

Organic solvents: 61.0 %

10 Stability and reactivity

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

(Contd. on page 4)

Product name: Leukocyte Activation Cocktail (51-20421E)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

- **Materials to be avoided:** Incompatible material: strong oxidizers.
- **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 irritating effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

12 Ecological information:

- **Ecotoxicological effects:**
- **Other information:**
The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

13 Disposal considerations

- **Product:**
- **Recommendation**
Must not be disposed of with solid waste.
Dispose of material in accordance with federal (40 CFR 261), state and local requirements.
This product is not considered a RCRA hazardous waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to state and federal 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

(Contd. on page 5)



Product name: Leukocyte Activation Cocktail (51-20421E)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

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

· **Transport/Additional information:**

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

· **SARA Section 355 (extremely hazardous substances)**

None of the ingredients is listed.

· **SARA Section 313 (specific toxic chemical listings)**

None of the ingredients is listed.

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

67-68-5 dimethyl sulfoxide

· **California Proposition 65 - Chemicals known to cause cancer**

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause reproductive toxicity**

None of the ingredients is listed.

· **Carcinogenicity categories**

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

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **MAK (German Maximum Workplace Concentration)**

None of the ingredients is listed.

· **Product related hazard informations:**

The product has been classified and marked in accordance with regulations on hazardous materials.

· **Hazard symbols:**

Xn Harmful

· **Risk phrases:**

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

· **Safety phrases:**

25 Avoid contact with eyes.

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

28 After contact with skin, wash immediately with plenty of water

36 Wear suitable protective clothing.

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

(Contd. on page 6)



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 07/18/2003

Product name: Leukocyte Activation Cocktail (51-20421E)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 5)

· *National regulations*

· *Technical instructions (air):*

Class	Share in %
NK	61.0

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

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· *Department issuing MSDS: Safety and Environment Department*

· *Contact: Technical Service Representative*

USA

1 Identification of substance:

- **Product name:** Hick-1 Cytokine Positive Control Cells (51-23261Z)
(Human Intracellular Cytokine Staining Starter Kit)
- **Catalog number:** 559302
- **Manufacturer/Supplier:**
BD Biosciences, Pharmingen
10975 Torreyana Road
San Diego, CA 92121-1106
Tel. (877)232-8995
- **Information department:** Technical Services
- **Emergency information:**
In case of a chemical emergency, spill, fire, exposure, or accident please call ChemTrec at (800)424-9300 or 911

2 Composition/Data on components:

- **Chemical characterization**
- **Description:** Mixture consisting of the following components.

· **Dangerous components:**

67-68-5	dimethyl sulfoxide	10.0%
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3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment**
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
- **Classification system**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.
- **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 provide medical observation for at least 48 hours after the accident.
- **After inhalation**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek medical advice.
In case of unconsciousness place patient on side position for transportation.

(Contd. on page 2)

USA

Product name: Hick-1 Cytokine Positive Control Cells (51-23261Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 1)

- **After skin contact** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact** Rinse opened eye for 15 minutes under running water. Then consult a doctor.
- **After swallowing** If symptoms persist consult doctor.
- **Information for doctor** Show this label.

5 Fire fighting measures

- **Suitable extinguishing agents**
CO₂, ABC multipurpose dry chemical 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:** Wipe up with damp sponge or mop.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Additional information:**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Handling**
- **Information for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** No special measures required.
- **Storage**
- **Requirements to be met by storerooms and receptacles:** -80 C
- **Information about storage in one common storage facility:** Store away from oxidizing agents.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed containers.

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.

(Contd. on page 3)

Product name: Hick-1 Cytokine Positive Control Cells (51-23261Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 2)

Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure, use a chemical fume hood or a NIOSH/MSHA-approved respirator.

· Protection of hands:



Chemical resistant gloves (i.e. nitrile, or equivalent).

· Eye protection: Safety glasses

· Body protection: Protective work clothing (lab coat).

9 Physical and chemical properties:

· General Information

Form:	Liquid Frozen
Color:	Amber
Odor:	Characteristic

· Change in condition

Melting point/Melting range: Not determined
Boiling point/Boiling range: Not determined

· Flash point: Not applicable

· Ignition temperature: 270.0°C (518°F)

· Auto igniting: Product is not self igniting.

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

· Explosion limits:

Lower: 1.8 Vol %

· Density: Not determined

· Solubility in / Miscibility with

Water: Not miscible or difficult to mix

· pH-value: Not applicable

· Solvent content:

Organic solvents: 10.0 %

10 Stability and reactivity

· Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

· Materials to be avoided: Incompatible material: strong oxidizers.

· Dangerous reactions No dangerous reactions known

(Contd. on page 4)

Product name: Hick-1 Cytokine Positive Control Cells (51-23261Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 3)

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

11 Toxicological information

- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritating effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

12 Ecological information:

- **Ecotoxicological effects:**
- **Other information:**
The ecological effects have not been thoroughly investigated, but currently none have been identified.
- **General notes:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

13 Disposal considerations

- **Product:**
- **Recommendation**
Must not be disposed of with solid waste.
Dispose of material in accordance with federal (40 CFR 261), state and local requirements.
This product is not considered a RCRA hazardous waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to state and federal 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:** -

(Contd. on page 5)



Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 02/27/2004

Reviewed on 07/18/2003

Product name: Hick-1 Cytokine Positive Control Cells (51-23261Z)
(Human Intracellular Cytokine Staining Starter Kit)

(Contd. of page 4)

· Transport/Additional information:

If a dashed line appears in the Hazard Class section for the type of transportation, this indicates the product is not regulated for transportation. However, if a Hazard Class Number is listed the product is regulated.

15 Regulations

· SARA Section 355 (extremely hazardous substances)

None of the ingredients is listed.

· SARA Section 313 (specific toxic chemical listings)

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act)

67-68-5 dimethyl sulfoxide

· California Proposition 65 - Chemicals known to cause cancer

None of the ingredients is listed.

· California Proposition 65 - Chemicals known to cause reproductive toxicity

None of the ingredients is listed.

· Carcinogenicity categories

· IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· Product related hazard informations:

The product has been classified and marked in accordance with regulations on hazardous materials.

· Hazard symbols:

Xn Harmful

· Risk phrases:

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

· Safety phrases:

25 Avoid contact with eyes.

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

28 After contact with skin, wash immediately with plenty of water

36 Wear suitable protective clothing.

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

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Material Safety Data Sheet
acc. to ISO/DIS 11014

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Product name: Hick-1 Cytokine Positive Control Cells (51-23261Z)
(Human Intracellular Cytokine Staining Starter Kit)

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· *National regulations*

· *Technical instructions (air):*

Class	Share in %
NK	10.0

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

16 Other information:

To the best of our knowledge, the information contained herein is accurate. However, neither Becton, Dickinson and Company or any of its subsidiaries assumes any liabilities whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

· *Department issuing MSDS: Safety and Environment Department*

· *Contact: Technical Service Representative*

USA