



08/01/2011

Kit Components

Product code	Description
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1709178	DCode™ Reagents Kit for Heteroduplex
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Components:

9703131	DEM 2X Gel Solution
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9702681	DCode™ 2X Gel Loading Dye
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Material Safety Data Sheet

Printing date 08/01/2011

Reviewed on 08/01/2011

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** DEM 2X Gel Solution
- **Catalog or product number:** 9703131
- **Application of the substance / the preparation** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Bio-Rad Laboratories, Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547 (510)741-1000
- **Information department:** Technical services, customer support.
- **Emergency telephone number:**
1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.
510-741-1000

2 Composition/information on ingredients

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

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

7732-18-5	water		50-100%
79-06-1	acrylamide	T Carc. Cat. 2, Muta. Cat. 2 R45-46-25-48/23/24/25 Xn R20/21-62 Xi R36/38-43 Repr. Cat. 3	20-35%

· **SVHC**

79-06-1	acrylamide
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- **Additional information** For the wording of the listed risk phrases refer to section 15.

3 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**
Toxic by ingestion.
Toxic by dermal absorption.
Toxic by inhalation.
Contains a suspect carcinogen.
Irritant to skin.
Sensitizer by dermal contact.
Contains a suspected reproductive toxin.
Irritant to respiratory system and skin.



T; Toxic

R45-46-23/24/25: May cause cancer. May cause heritable genetic damage. Toxic by inhalation, in contact with skin and if swallowed.



Xn; Harmful

R20/21-48-62: Harmful by inhalation and in contact with skin. Danger of serious damage to health by prolonged exposure. Possible risk of impaired fertility.

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 Xi; Irritant

R43: May cause sensitization by skin contact.

· **Information concerning particular hazards for human and environment:**

The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

· **Classification system:**

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

The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

· **Label elements**

· **Labelling according to EU guidelines:**

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

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

T Toxic

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

acrylamide

· **Risk phrases:**

45 May cause cancer.

46 May cause heritable genetic damage.

20/21 Also harmful by inhalation and in contact with skin.

23/24/25 Also toxic by inhalation, in contact with skin and if swallowed.

43 May cause sensitization by skin contact.

48 Danger of serious damage to health by prolonged exposure.

62 Possible risk of impaired fertility

· **Safety phrases:**

53 Avoid exposure - obtain special instructions before use.

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

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

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

· **Emergency overview:**

· **Routes of exposure:**

Ingestion

Inhalation

Skin

· **Classification system**

· **Special Hazards**

Reproductive toxin.

Carcinogen.

4 First aid measures

· **General information**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

Remove breathing apparatus only after contaminated clothing have been completely removed.

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In case of irregular breathing or respiratory arrest provide artificial respiration.

- **After inhalation**

Supply fresh air or oxygen; call for doctor.

In case of unconsciousness place patient stably in side position for transportation.

- **After skin contact** Immediately wash with water and soap and rinse thoroughly.

- **After eye contact** Rinse opened eye for several minutes under running water. Then consult a doctor.

- **After swallowing** Do not induce vomiting; immediately call for medical help.

5 Firefighting measures

- **Suitable extinguishing agents**

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

- **Special hazards arising from the substance or mixture** No further relevant information available.

- **Protective equipment:**

Mount respiratory protective device.

Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Wear protective equipment (See section 8). Keep unprotected persons away.

- **Environmental precautions:**

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

- **Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Handling**

- **Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

No special precautions are necessary if used correctly.

- **Information about protection against explosions and fires:** Keep respiratory protective device available.

- **Storage**

- **Requirements to be met by storerooms and receptacles:** According to product specification

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:** Keep receptacle tightly sealed.

- **Specific end use(s)** No further relevant information available.

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Trade name: **DEM 2X Gel Solution**

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8 Exposure controls/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:**

79-06-1 acrylamide

PEL	0.3 mg/m ³ Skin
REL	0.03 mg/m ³ Skin
TLV	0.03 mg/m ³ Skin

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

· **Personal protective equipment**

· **General protective and hygienic measures**

- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the skin.
- Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:** Protective gloves.

· **Material of gloves** Synthetic gloves

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**

- Safety glasses
- Tightly sealed goggles.

9 Physical and chemical properties

· **General Information**

· **Appearance:**

Form:	liquid
Color:	Clear
Odor:	Odorless

· **Change in condition**

Melting point/Melting range:	undetermined
Boiling point/Boiling range:	125°C

· **Flash point:** Not applicable

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

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

· **Vapor pressure at 20°C:** 23 hPa

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Trade name: DEM 2X Gel Solution

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- **Density:** Not determined
- **Solubility in / Miscibility with Water:** Fully miscible
- **Solvent content:**
 - Organic solvents:** 0.0 %
 - Water:** 63.0 %
- **Solids content:** 100.0 %
- **Other information** No further relevant information available.

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** Carbon monoxide

11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values for hazardous components per OSHA criteria:**

79-06-1 acrylamide

Oral	LD50	124 mg/kg (rat)
Dermal	LD50	400 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritant effect.
- **Sensitization:** Sensitization possible through skin contact.

· **Additional toxicological information:**

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

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

Toxic

Harmful

Irritant

Carcinogenic

The product can cause inheritable damage.

· **Target organs:**

Skin.

Respiratory tract.

12 Ecological information

- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.

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Trade name: DEM 2X Gel Solution

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- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
*Water danger class 3 (Internal calculation) (Self-assessment): extremely hazardous for water.
 Do not allow product to reach ground water, water course or sewage system, even in small quantities.
 Danger to drinking water if even extremely small quantities leak into the ground.*

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
 Hand over to hazardous waste disposers.*
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**
- **DOT** UN3426
- **ADR, IMDG, IATA** 3426
- **UN proper shipping name**
- **DOT, IMDG, IATA** ACRYLAMIDE SOLUTION
- **ADR** 3426 ACRYLAMIDE SOLUTION
- **Transport hazard class(es)**
- **DOT, IMDG, IATA**
- **Class** 6.1 Toxic substances.
- **Label** 6.1
- **ADR**
- **Class** 6.1 Toxic substances
- **Label** 6.1
- **Packing group**
- **DOT, ADR, IMDG, IATA** III
- **Environmental hazards:**
- **Marine pollutant:** No
- **Special precautions for user** Warning: Toxic substances
- **Danger code (Kemler):** 60
- **EMS Number:** F-A,S-A
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

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Trade name: **DEM 2X Gel Solution**

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15 Regulatory information

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

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

79-06-1 acrylamide

· **Section 313 (40CFR372.65):**

79-06-1 acrylamide

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

All ingredients are listed.

· **California Proposition 65:**

· **Chemicals known to cause cancer:**

79-06-1 acrylamide

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

79-06-1 acrylamide

B2

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

79-06-1 acrylamide

2A

· **NTP (National Toxicology Program)**

79-06-1 acrylamide

R

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

79-06-1 acrylamide

A3

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

79-06-1 acrylamide

2

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

79-06-1 acrylamide

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

None of the ingredients is listed.

· **Markings according to EU guidelines:**

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

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

T Toxic

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

acrylamide

· **Risk phrases:**

45 May cause cancer.

46 May cause heritable genetic damage.

20/21 Also harmful by inhalation and in contact with skin.

23/24/25 Also toxic by inhalation, in contact with skin and if swallowed.

43 May cause sensitization by skin contact.

48 Danger of serious damage to health by prolonged exposure.

62 Possible risk of impaired fertility

· **Safety phrases:**

53 Avoid exposure - obtain special instructions before use.

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Trade name: DEM 2X Gel Solution

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- 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately.
- 60 This material and its container must be disposed of as hazardous waste.

- **National regulations**
- **Technical instructions (air):**

Class	Share in %
II	20-35

- **Water hazard class:** Water danger class 3 (Self-assessment): extremely hazardous for water.

16 Other information

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

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

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

- *** Data compared to the previous version altered.**

Material Safety Data Sheet

Printing date 08/01/2011

Reviewed on 07/19/2011

1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** DCode™ 2X Gel Loading Dye
- **Catalog or product number:** 9702681
- **Application of the substance / the preparation** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Bio-Rad Laboratories, Life Science Group
 2000 Alfred Nobel Drive
 Hercules, California 94547 (510)741-1000
- **Information department:** Technical services, customer support.
- **Emergency telephone number:**
 1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.
 510-741-1000

2 Composition/information on ingredients

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

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

56-81-5	glycerol	50-100%
7732-18-5	water	20-35%

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

3 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void
- **Information concerning particular hazards for human and environment:**
 The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**
 The classification was made according to the latest editions of the EU-lists, and expanded upon from company and literature data.
 The classification was made according to OSHA 29CFR 1910.1200 and 1910.1030, and is expanded upon from company and/or literature information.

- **Label elements**
- **Labelling according to EU guidelines:**
 Observe the general safety regulations when handling chemicals
 The product is not subject to identification regulations under EU Directives and the Ordinance on Hazardous Materials (GefStoffV).
- **Safety phrases:**
 60 This material and its container must be disposed of as hazardous waste.

4 First aid measures

- **General information** No special measures required.

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Printing date 08/01/2011

Reviewed on 07/19/2011

Trade name: DCode™ 2X Gel Loading Dye

(Contd. of page 1)

- **After inhalation** Supply fresh air; consult doctor in case of complaints.
- **After skin contact** Generally the product does not irritate the skin.
- **After eye contact** Rinse opened eye for several minutes under running water.
- **After swallowing** Induce vomiting and call for medical help.

5 Firefighting measures

- **Suitable extinguishing agents** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment (See section 8). Keep unprotected persons away.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Reference to other sections** No dangerous substances are released.

7 Handling and storage

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

8 Exposure controls/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:**

56-81-5 glycerol

PEL ()	15* 5** mg/m ³
	*total dust **respirable fraction
TLV ()	10 ppm

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

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Trade name: DCode™ 2X Gel Loading Dye

(Contd. of page 2)

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

9 Physical and chemical properties

· **General Information**

· **Appearance:**

Form: liquid
Color: Blue
Odor: Odorless

· **Change in condition**

Melting point/Melting range: undetermined
Boiling point/Boiling range: 100°C

· **Flash point:** > 100°C

· **Ignition temperature:** 400°C

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

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

· **Explosion limits:**

Lower: 0.9 Vol %

· **Vapor pressure at 20°C:** 23 hPa

· **Density:** Not determined

· **Solubility in / Miscibility with**

Water: Fully miscible

· **Solvent content:**

Organic solvents: 70.0 %

Water: 29.8 %

Solids content: 0.2 %

· **Other information** No further relevant information available.

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known

11 Toxicological information

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

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Trade name: DCode™ 2X Gel Loading Dye

(Contd. of page 3)

Additional toxicological information:

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

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

Target organs: Not applicable.

12 Ecological information

Acquatic toxicity: No further relevant information available.

Persistence and degradability No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential No further relevant information available.

Additional ecological information:

General notes: Generally not hazardous for water.

13 Disposal considerations

Waste treatment methods

Recommendation

Hand over to hazardous waste disposers.

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

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

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

14 Transport information

UN-Number

DOT, ADR, ADN, IMDG, IATA Void

UN proper shipping name

DOT, ADR, ADN, IMDG, IATA Void

Transport hazard class(es)

DOT, ADR, ADN, IMDG, IATA

Class Void

Packing group

DOT, ADR, IMDG, IATA Void

Environmental hazards:

Marine pollutant: No

Special precautions for user Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

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Reviewed on 07/19/2011

Trade name: DCode™ 2X Gel Loading Dye

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

15 Regulatory information

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

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

None of the ingredients is listed.

· **Section 313 (40CFR372.65):**

None of the ingredients is listed.

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

56-81-5 glycerol

7732-18-5 water

34725-61-6 bromophenol blue, sodium salt

2650-17-1 Xylene cyanole FF

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **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.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

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

None of the ingredients is listed.

· **Markings according to EU guidelines:**

Observe the general safety regulations when handling chemicals

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

· **Safety phrases:**

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

· **National regulations**

· **Technical instructions (air):**

Class	Share in %
NK	50-100

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Reviewed on 07/19/2011

Trade name: DCode™ 2X Gel Loading Dye

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

16 Other information

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

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

- **Contact:**

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

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