Material Safety Data Sheet

Authorization date: 08/08/2002
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Version: 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: DIG Gel Shift Kit, 2nd generation
Product number: 3353591
Global material number: 03353591001
Business area: Roche Applied Sciences
Product line: Not applicable
Instrument type: Not applicable

Supplier:
Roche Diagnostics Corporation
9115 Hague Road
Indianapolis, IN 46250
Site Phone Number: 1-800-428-5074

Emergency telephone number:
CHEMTREC:
1-800-424-9300 (U.S. or Canada)
1-703-527-3887 (International)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Description 1: Bottle 1

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Tris hydrochloride	1185-53-1	1-5	NA	NA	NA	NA
Potassium cacodylate	21416-85-3	10 - 20	NA	NA	NA	NA

Description 2: Bottle 2

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Cobalt (II) chloride, hexahydrate	7791-13-1	0.1-<1	0.1 mg/m^3 dust and fume	NA	NA	NA

Description 3: Bottle 3

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Digoxigenin-11-ddUTP	127264-48-6	0.1-<1	NA	NA	NA	NA

Description 4: Bottle 4

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Potassium chloride	7447-40-7	1-5	NA	NA	NA	NA
Potassium cacodylate	21416-85-3	1-5	NA	NA	NA	NA
Glycerol	56-81-5	50 - 60	15 mg/m^3 total 5 mg/m^3	NA	10 mg/m^3	NA

Description 5: Bottle 5

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
HEPES	7365-45-9	1-5	NA	NA	NA	NA
Potassium chloride	7447-40-7	1-5	NA	NA	NA	NA
Tween 20	9005-64-5	1-5	NA	NA	NA	NA

Description 6: Bottle 7

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Potassium chloride	7447-40-7	1-5	NA	NA	NA	NA

Description 7: Bottle 12

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Glycerol	56-81-5	40-50	15 mg/m^3 total 5 mg/m^3	NA	10 mg/m^3	NA

Description 8: Bottle 13

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Bromophenol blue	115-39-9	40-50	NA	NA	NA	NA
Glycerol	56-81-5	40-50	15 mg/m^3 total 5 mg/m^3	NA	10 mg/m^3	NA

Description 9: Bottle 15

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Diethanolamine	111-42-2	1-5	NA	NA	2 mg/m^3 Skin - potential significant contribution to overall exposure by the cutaneous route	NA

Description 10: All other bottles.

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
No hazardous components >1%, >0.1% carcinogen	NONE	N/A	NA	NA	NA	NA

3. HAZARDS IDENTIFICATION

Emergency Overview

NFPA Ratings: Health= 3 Flammability= 0 Reactivity= 0 Special= CA , T, I

Special Definitions: A=Allergen CA=Carcinogen CO=Corrosive F=Flammable H=Harmful I=Irritant Ox=Oxidizer PB=Potential Biohazard R=Reproductive S=Sensitizer T=Toxic T+=Highly Toxic W=Water Reactive

Principle routes of exposure: Ingestion, inhalation, skin absorption, skin and/or eye contact.

Inhalation: Arsenic compounds (i.e. cacodylate compounds) are toxic by inhalation. May cause irritation of respiratory tract. Cobalt dichloride may cause cancer by inhalation.

Ingestion: Arsenic compounds (i.e. cacodylate compounds) are toxic if swallowed. Components of the product may be absorbed into the body by inhalation, ingestion and through the skin.

Skin contact: May be absorbed through the skin in harmful amounts.

Eye contact: May cause irritation.

Sensitization or Odor threshold: May cause sensitisation of susceptible persons.

Components	ACGIH - Sensitizer Designation:	Germany (DFG) - Skin/Sensitizers:	Switzerland - Sensitizers:	AIHA - Odor Threshold Values:
Cobalt (II) chloride, hexahydrate		respiratory and skin sensitizer	Sensitizer	

Components	ACGIH - Sensitizer Designation:	Germany (DFG) - Skin/Sensitizers:	Switzerland - Sensitizers:	AIHA - Odor Threshold Values:
Diethanolamine		skin sensitizer	Sensitizer	

Medical conditions aggravated by exposure: None known

Additional information: None

4. FIRST AID MEASURES

Inhalation: Consult a physician. Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion: Call a physician immediately. Do not induce vomiting without medical advice. Drink 1 or 2 glasses of water.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Notes to physician: None determined

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use dry chemical, CO2, water spray or "alcohol" foam.

Unusual hazards: None known.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment. Evacuate personnel to safe areas. Remove all sources of ignition. Avoid dust formation. Ensure adequate ventilation.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Do not let product enter drains.

Methods for cleaning up: Never return spills in original containers for re-use. Soak up with oil absorbent material. Sweep up or vacuum (if powder) or soak up with inert absorbent material (if liquid), then place into a suitable clean, dry, closed container, and label for disposal.

7. HANDLING AND STORAGE

Handling: Protect from contamination. Wear personal protective equipment.

Storage: Keep containers dry and tightly closed to avoid moisture absorption and contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Not applicable.

Personal Protective Equipment

Respiratory protection: Respiratory protection is not required under normal use of this product. If respiratory protection is needed, follow the OSHA regulation, 29CFR1910.134. Always use a NIOSH approved respirator when necessary.

Hand protection: Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.

Skin and body protection: Wear appropriate body protection to prevent skin contact.

Eye protection: Wear appropriate eye protection to prevent eye contact.

Hygiene measures: Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice for diagnostics. When using, do not eat, drink or smoke. Keep away from food and drink. Keep away from tobacco products.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling point/range: No information available
Color: Bottle 2=slightly pink. Bottles 12 & 13=blue. All other bottles=colorless.
Melting point/range: Not determined
Odor: None.
pH: Bottle 1=6.6. Bottle 4=7.2. Bottle 8=8. All other bottles=Neutral
Physical state: Liquid.
Solubility in water: Soluble.
Flash point: No information available.
LEL (%): Not determined
UEL (%): Not determined

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
Polymerization: None under normal processing.
Hazardous decomposition products: No data available.
Materials to avoid: Incompatible with strong acids and bases. Oxidising agents (strong). Heavy metals.

11. TOXICOLOGICAL INFORMATION

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Cobalt (II) chloride, hexahydrate	=766 mg/kg Oral LD50 Rat	

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Potassium chloride	=2600 mg/kg Oral LD50 Rat	

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Glycerol	=12600 mg/kg Oral LD50 Rat >21900 mg/kg Dermal LD50 Rat >570 mg/m^3 Inhalation LC50 Rat 1h	respiratory system skin eyes kidneys

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Potassium chloride	=2600 mg/kg Oral LD50 Rat	
Tween 20	=36700 µL/kg Oral LD50 Rat	

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Potassium chloride	=2600 mg/kg Oral LD50 Rat	

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
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Glycerol	=12600 mg/kg Oral LD50 Rat >21900 mg/kg Dermal LD50 Rat >570 mg/m^3 Inhalation LC50 Rat 1h	respiratory system skin eyes kidneys

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Diethanolamine	=7640 µL/kg Dermal LD50 Rabbit	eyes skin respiratory system

Inhalation: No additional data available
Skin: No additional data available
Oral: LD50/oral/rat =2600mg/m^3 for sodium cacodylate. Digoxigenin: LD50/dog/oral = 0.422 mg/kg.
Additional information: Sodium or potassium cacodylate may cause nephrotoxicity, hepatotoxicity, and may produce abnormalities of the hematopoietic system.
Mutagenic effects: No data is available on the product itself
Reproductive toxicity: No data is available on the product itself

Components	IARC Group 1	IARC Group 2A or 2B	IARC Group 3 or 4	NTP	OSHA Select Carcinogens
Cobalt (II) chloride, hexahydrate		Monograph 52 [1991] (listed under Cobalt and Cobalt compounds)			Present

Components	IARC Group 1	IARC Group 2A or 2B	IARC Group 3 or 4	NTP	OSHA Select Carcinogens
Diethanolamine			Monograph 77 [2000]		

12. ECOLOGICAL INFORMATION

Bioaccumulation: Not determined

Aquatic toxicity: No data is available on the product itself

Ecotoxicity effects: No data is available on the product itself

U.S. EPA, RCRA, CERCLA, SARA, or DGC information on persistent, bioaccumulative, and toxic chemicals (PBTs):
The following chemicals are listed under the U.S. EPA regulations of RCRA, CERCLA, SARA, or DGC:

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

14. TRANSPORT INFORMATION

Is product hazardous to ship? Yes.
Component(s) hazardous to ship: Bottles 1 and 4

DOT

Proper shipping name: Arsenic compound, liquid, n.o.s. (Potassium cacodylate solution)			
UN Number: UN 1556	**Hazard class:** 6.1	**Subsidiary risk:** Not applicable	**Packing group:** III

ICAO/IATA

Proper shipping name: Arsenic compound, liquid, n.o.s. (Potassium cacodylate solution)			
UN Number: UN 1556	**Hazard class:** 6.1	**Subsidiary risk:** Not applicable	**Packing group:** III

15. REGULATORY INFORMATION

U.S. Regulations:

U.S. CERCLA/SARA/TSCA Regulatory Information: The following chemicals are listed under the following TSCA/SARA/CERCLA lists. Refer to TSCA regulation if you need a definition for acronyms that may be shown in the TSCA Inventory field in the table below

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Tris hydrochloride				Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Potassium chloride				Present
Glycerol				Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
HEPES				Present
Potassium chloride				Present
Tween 20				XU

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Potassium chloride				Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Glycerol				Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Bromophenol blue				Present
Glycerol				Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Diethanolamine		=100 lb final RQ =45.4 kg final RQ	Listed	T

U.S. Clean Water Act (CWA)/ California Proposition 65: The following chemicals are listed under the CWA and/or California Proposition 65:

Components	Clean Water Act Hazardous Substances	Clean Water Act Priority Pollutants	California Proposition 65
Cobalt (II) chloride, hexahydrate			carcinogen, initial date 7/1/92 (powder)

Canadian Regulations:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Components	Canada - WHMIS: Classifications of Substances:
Cobalt (II) chloride, hexahydrate	D2A D2B

Components	Canada - WHMIS: Classifications of Substances:
Potassium chloride	Uncontrolled product according to WHMIS classification criteria
Glycerol	Uncontrolled product according to WHMIS classification criteria

Components	Canada - WHMIS: Classifications of Substances:
Potassium chloride	Uncontrolled product according to WHMIS classification criteria
Tween 20	Uncontrolled product according to WHMIS classification criteria

Components	Canada - WHMIS: Classifications of Substances:
Potassium chloride	Uncontrolled product according to WHMIS classification criteria

Components	Canada - WHMIS: Classifications of Substances:
Glycerol	Uncontrolled product according to WHMIS classification criteria

Components	Canada - WHMIS: Classifications of Substances:
Glycerol	Uncontrolled product according to WHMIS classification criteria

Components	Canada - WHMIS: Classifications of Substances:
Diethanolamine	D2B

16. OTHER INFORMATION

Reason for revision: Not applicable
References: None.
Additional advice: None
Prepared by: Roche Diagnostics, Health & Safety Department, MSDS Contact: 317-521-7425 or 317-521-7505

End of Safety Data Sheet