Material Safety Data Sheet
acc. to ISO/DIS 11014

Date Prepared: 06/28/2012 Reviewed On: 06/28/2012

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

· **Product Identifier**
· **Product Name: Indole**
· **Catalog Number:** 261185
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Sector of Use**
SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites
SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU20 Health services
SU24 Scientific research and development

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
BD Diagnostic Systems
7 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771 - 0100 or (800) 638 – 8663
Email Address: Technical_Services@bd.com
· **Information Department:** Technical Service
· **Emergency telephone number:**
In case of a chemical emergency, spill, fire, exposure, or accident, contact BD Diagnostic Systems (410) 771-0100 or (800)-638-8663, or ChemTrec at (800) 424-9300.

2 Hazards identification

· **Classification of the substance or mixture**

GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapour.

GHS05 Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

GHS07

Acute Tox. 4 H302 Harmful if swallowed.
STOT SE 3 H335+H336 May cause respiratory irritation. May cause drowsiness or dizziness.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

C; Corrosive
R34: Causes burns.

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Xi; Irritant

R37: Irritating to respiratory system.

R10: Flammable.

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

· **Label elements**

· **GHS label elements**
The product is classified and labelled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

GHS02 GHS05 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**
hydrochloric acid
isobutanol

· **Hazard statements**
Flammable liquid and vapour.
Harmful if swallowed.
Causes severe skin burns and eye damage.
May cause respiratory irritation. May cause drowsiness or dizziness.

· **Precautionary statements**
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor/physician.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **NFPA ratings (scale 0-4)**

Health = 3
Flammability = 3
Reactivity = 0

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· **HMIS ratings (scale 0-4)**

HEALTH 3	Health = 3
FIRE 3	Flammability = 3
REACTIVITY 0	Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

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

· **Dangerous Components:**		
78-83-1	isobutanol	62.3%
7647-01-0	hydrochloric acid	32.1%
100-10-7	p-Dimethylaminobenzaldehyde	5.6%

4 First aid measures

· **Description of first aid measures**
· **General information**
Remove breathing apparatus only after contaminated clothing have been completely removed.
· **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 15 minutes under running water. Then consult a doctor.
· **After swallowing** Immediately call a doctor.
· **Information for doctor** Show this product label or this MSDS.
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents**
CO2, ABC multipurpose dry chemical or water spray. Fight larger fires with water spray or alcohol resistant foam.

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· **Special hazards arising from the substance or mixture**
No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** No special measures required.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **Environmental precautions:** Wipe up with damp sponge or mop.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders).
Use neutralizing agent.
· **Reference to other sections**
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**
· **Precautions for safe handling** Ensure good ventilation/exhaustion at the workplace.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:** 15 - 30 °C
· **Information about storage in one common storage facility:**
Store away from oxidizing agents.
Do not store together with alkaline material.
· **Further information about storage conditions:**
Store in cool, dry conditions in well sealed containers.
· **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 Section 7.

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
78-83-1 isobutanol	
PEL	300 mg/m³, 100 ppm
REL	150 mg/m³, 50 ppm
TLV	152 mg/m³, 50 ppm
7647-01-0 hydrochloric acid	
PEL	Short-term value: C 7 mg/m³, C 5 ppm
REL	Short-term value: C 7 mg/m³, C 5 ppm
TLV	Short-term value: C 2.98 mg/m³, C 2 ppm

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

· **Exposure controls**
· **Personal Protective Equipment**
· **General protective and hygienic measures**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Breathing equipment:**
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

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Liquid
Color:	According to product specification
· **Odor:**	Characteristic
· **pH-value:**	Acidic
· **Change in condition**	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	85°C (185 °F)
· **Flash point:**	24°C (75 °F)

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· **Ignition temperature:**	390.0°C (734 °F)
· **Auto igniting:**	Product is not self igniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	1.7 Vol %
Upper:	12.0 Vol %
· **Vapor pressure at 20°C (68 °F):**	20.0 hPa (15 mm Hg)
· **Density:**	Not determined
· **Solubility in / Miscibility with Water:**	Soluble
· **Solvent content:**	
Solids content:	5.6 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** Incompatibles materials: Strong Bases and oxidizers
· **Hazardous decomposition products:**
Nitrogen oxides (NOx)
Carbon monoxide (CO) and carbon dioxide (CO2)
Chlorine (Cl)

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
7647-01-0 hydrochloric acid		
Oral	LD50	900 mg/kg (rab)

· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:** Strong caustic effect.

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· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive (causes skin burns)
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
7647-01-0	hydrochloric acid	3

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic 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.
· **Mobility in soil** No further relevant information available.
· **Ecotoxical effects:**
· **Other information:**
The ecological effects have not been thoroughly investigated, but currently none have been identified.
· **Additional ecological information:**
· **General notes:** Water hazard class 2 (Self-assessment): hazardous for water.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation**
Must not be disposed of with solid waste.
Dispose of material in accordance with federal (40 CFR 261.3), state and local requirements.
RCRA hazardous waste - RCRA # D001 (ignitable).
RCRA hazardous waste - RCRA # D002 (corrosive).

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· **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

· **UN-Number**	
· **DOT**	UN2924
· **ADR, IMDG, IATA**	2924
· **UN proper shipping name**	
· **ADR**	2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOBUTANOL, HYDROCHLORIC ACID)
· **IMDG, IATA**	FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOBUTANOL, HYDROCHLORIC ACID)
· **Transport hazard class(es)**	
· **DOT**	
· **Class**	3 Flammable liquids.
· **Label**	3 + 8
· **ADR**	
· **Class**	3 (FC) Flammable liquids
· **Label**	3 + 8
· **IMDG, IATA**	
· **Class**	3 Flammable liquids.
· **Label**	3 + 8
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III

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· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids
· **EMS Number:**	F-E,S-C
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Remarks:**	This product can be transported using the "small quantity" exception. This package conforms to 49 CFR 173.4 for domestic highway or rail transport only. The Hazard Class, Identification number, and Packing group listed above is for informational purposes only.
· **IMDG**	
· **Remarks:**	Limited quantity
· **IATA**	
· **Remarks:**	This product can be transported using the exception: Dangerous Goods in Excepted Quantities. The Hazard class, Identification number, and Packing group listed above is for informational purposes only.
· **UN "Model Regulation":**	UN2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ISOBUTANOL (ISOBUTYL ALCOHOL), HYDROCHLORIC ACID, SOLUTION), 3 (8), III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

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

7647-01-0	hydrochloric acid

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

7647-01-0	hydrochloric acid

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

All ingredients are listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

· **California Proposition 65 - Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

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

7647-01-0	hydrochloric acid	A4

· **National regulations**

· **Water hazard class:** Water hazard class 2 (Self-assessment): hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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 can not guarantee that these are the only hazards that exist.

· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent