

**B Cap**  
**BR651-2**

Version 1.1

Issuing date 09/28/2017

Revision Date 11/03/2017

Print Date 06/28/2019

**1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING****Product information**

Trade name : B Cap

Number : 000000011318

Recommended use of the chemical and restrictions on use : Laboratory Use

Manufacturer or supplier's details : Honeywell Specialty Chemicals Seelze GmbH  
Wunstorfer Straße 40  
Seelze, 30926

For further information, please contact: : 1-800-368-0050  
+1-231-726-3171  
(Monday-Friday, 9:00am-5:00pm)

**In case of emergency call :** **Medical: 1-800-498-5701 or +1-303-389-1414**  
**Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**  
**In Japan: +(81)-345209637**  
: (24 hours/day, 7 days/week)

**2. HAZARDS IDENTIFICATION****Classification of the substance or mixture**

Classification of the substance or mixture : Flammable liquids, Category 2  
Acute toxicity, Category 4, Oral  
Skin corrosion, Category 1B  
Serious eye damage, Category 1  
Carcinogenicity, Category 2  
Specific target organ toxicity - single exposure, Category 3

**GHS Label elements, including precautionary statements**

Symbol(s)

:



Signal word

: Danger

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Hazard statements : Highly flammable liquid and vapour.  
Harmful if swallowed.  
Causes severe skin burns and eye damage.  
May cause respiratory irritation.  
Suspected of causing cancer.

Precautionary statements : **Prevention:**  
Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
Keep container tightly closed.  
Ground/bond container and receiving equipment.  
Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
Use only non-sparking tools.  
Take precautionary measures against static discharge.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/protective clothing/eye protection/face protection.

**Response:**

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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/doctor.

Wash contaminated clothing before reuse.

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Store locked up.

**Disposal:**

Dispose of contents/ container to an approved waste disposal plant.

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical nature : Mixture

Chemical name	CAS-No.	Concentration
Tetrahydrofuran	109-99-9	90.00 %
Tetrahydrofuran		
1-Methylimidazole	616-47-7	10.00 %
1-Methylimidazole		

Note: Organic Solvents Class 2

Note: Substances Subject to be Notified Names

Note: Type III Monitoring Chemicals

**4. FIRST AID MEASURES**

- Inhalation : Call a physician immediately.  
Remove to fresh air.  
If not breathing, give artificial respiration.  
If breathing is difficult, give oxygen.  
Use oxygen as required, provided a qualified operator is present.
- Skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Take off contaminated clothing and shoes immediately.  
Wash contaminated clothing before re-use.  
Call a physician immediately.
- Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Call a physician immediately.
- Ingestion : Do not induce vomiting without medical advice.  
Never give anything by mouth to an unconscious person.  
Call a physician immediately.
- Notes to physician : Treat symptomatically.

**5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Cool closed containers exposed to fire with water spray.

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- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : Extremely flammable.  
Vapours may form explosive mixtures with air.  
Vapours are heavier than air and may spread along floors.  
Vapors may travel to areas away from work site before igniting/flashing back to vapor source.  
May form explosive peroxides.  
In case of fire hazardous decomposition products may be produced such as:  
Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

**6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Wear personal protective equipment.  
Immediately evacuate personnel to safe areas.  
Keep people away from and upwind of spill/leak.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Do not swallow.  
Do not breathe vapours or spray mist.  
Do not get in eyes, on skin, or on clothing.
- Environmental precautions : Prevent further leakage or spillage if safe to do so.  
Prevent product from entering drains.  
Discharge into the environment must be avoided.  
Do not flush into surface water or sanitary sewer system.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Methods and materials for containment and cleaning up : Ventilate the area.  
No sparking tools should be used.  
Use explosion-proof equipment.  
Contain and collect spillage with non-combustible absorbent materials, e.g. sand, earth, vermiculite, diatomaceous earth and place in container for disposal according to local regulations (see section 13).

**7. HANDLING AND STORAGE****Handling**

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Precautions for safe handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not swallow.  
Do not breathe vapours or spray mist.  
Do not get in eyes, on skin, or on clothing.

Advice on protection against fire and explosion : Keep away from fire, sparks and heated surfaces.  
Take precautionary measures against static discharges.  
Ensure all equipment is electrically grounded before beginning transfer operations.  
Use explosion-proof equipment.  
Keep product and empty container away from heat and sources of ignition.  
No sparking tools should be used.  
No smoking.

**Storage**

Conditions for safe storage, including any incompatibilities : Store in area designed for storage of flammable liquids.  
Protect from physical damage.  
Keep containers tightly closed in a dry, cool and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep away from heat and sources of ignition.  
Keep away from direct sunlight.  
Protect from exposure to air/oxygen (peroxide formation).  
Store away from incompatible substances.  
Container hazardous when empty.  
Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Tetrahydrofuran and Tetrahydrofuran	109-99-9	TL : Threshold limits	(50 ppm)	04 2009	ISHL:Industrial Safety and Health Law OEL

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		SKIN_DES : Skin designation:	Can be absorbed through the skin.	09 2015	Japan Society for Occupational Health:Japan Society for Occupational Health allowable concentration recommendatio n value
		TWA : Time weighted average	148 mg/m3 (50 ppm)Provisional value.	09 2015	Japan Society for Occupational Health:Japan Society for Occupational Health allowable concentration recommendatio n value

### Appropriate engineering controls

Use with local exhaust ventilation.

Prevent vapour buildup by providing adequate ventilation during and after use.

### Individual protection measures, such as personal protective equipment

- Respiratory protection : In case of insufficient ventilation wear suitable respiratory equipment.  
For rescue and maintenance work in storage tanks use self-contained breathing apparatus.  
Use NIOSH approved respiratory protection.
- Hand protection : Solvent-resistant gloves  
Gloves must be inspected prior to use.  
Replace when worn.
- Eye protection : Do not wear contact lenses.  
Wear as appropriate:  
Safety glasses with side-shields  
If splashes are likely to occur, wear:  
Goggles or face shield, giving complete protection to eyes
- Skin and body protection : Wear as appropriate:  
Solvent-resistant apron

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	Flame retardant antistatic protective clothing. If splashes are likely to occur, wear: Protective suit
Hygiene measures	: When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Keep working clothes separately. Remove and wash contaminated clothing before re-use. Do not swallow. Do not breathe vapours or spray mist. Do not get in eyes, on skin, or on clothing. This material has an established AIHA ERPG exposure limit. The current list of ERPG exposure limits can be found at <a href="http://www.aiha.org/insideaiha/GuidelineDevelopment/ERPG/Documents/2011erpgweelhandbook_table-only.pdf">http://www.aiha.org/insideaiha/GuidelineDevelopment/ERPG/Documents/2011erpgweelhandbook_table-only.pdf</a> .
Protective measures	: Ensure that eyewash stations and safety showers are close to the workstation location.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	: liquid, clear
Colour	: colourless
Odour	: ether-like
pH	: Note: Not applicable
Melting point/range	: -108.5 °C Note: The physical data is that of the main component.
Boiling point/boiling range	: 66 °C Note: The physical data is that of the main component.
Flash point	: < 5 °F (-15 °C) Method: closed cup
Lower explosion limit	: 2 %(V) Note: The physical data is that of the main component.
Upper explosion limit	: 11.8 %(V) Note: The physical data is that of the main component.

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Vapour pressure : 189 hPa  
at 20 °C(68 °F)  
Note: The physical data is that of the main component.

Vapour density : 2.5

Density : 0.888 g/cm<sup>3</sup> at 20 °C  
Note: The physical data is that of the main component.

Water solubility : Note: completely soluble

Ignition temperature : 321 °C  
Method: The physical data is that of the main component.

**10. STABILITY AND REACTIVITY**

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Hazardous polymerization does not occur.

Conditions to avoid : Heat, flames and sparks.  
Keep away from direct sunlight.  
Protect from exposure to air/oxygen (peroxide formation).  
Protect against light.

Incompatible materials to avoid : Strong oxidizing agents  
Strong acids and strong bases  
Air  
Oxygen  
May attack many plastics, rubbers and coatings.

Oxidizing solids  
Oxidizing liquids

Hazardous decomposition products : Peroxides  
In case of fire hazardous decomposition products may be produced such as:  
Carbon dioxide (CO<sub>2</sub>), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), dense black smoke.



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**11. TOXICOLOGICAL INFORMATION**

Acute oral toxicity : Acute toxicity estimate: 1,577.41 mg/kg  
Method: Calculation method

Acute inhalation toxicity  
Tetrahydrofuran : LC50: ca. 61.9 mg/l 21000 ppm  
Exposure time: 3 h  
Species: Rat

Acute dermal toxicity : Acute toxicity estimate: 3,000 mg/kg  
Method: Calculation method

Skin irritation  
Tetrahydrofuran : Species: Rabbit  
Result: Irritating to skin.

1-Methylimidazole : Species: Rabbit  
Result: Causes burns.  
Classification: Corrosive

Eye irritation  
Tetrahydrofuran : Species: Rabbit  
Result: Irritating to eyes.

1-Methylimidazole : Species: Rabbit  
Result: Risk of serious damage to eyes.  
Classification: Corrosive

1-Methylimidazole : Test Method: Ames test  
Result: negative

Further information  
Tetrahydrofuran : Note:  
Confirmed animal carcinogen with unknown relevance to humans.

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**12. ECOLOGICAL INFORMATION**

## Toxicity to fish

## Tetrahydrofuran

: LC50: 2,160 mg/l  
Exposure time: 96 h  
Species: Pimephales promelas (fathead minnow)

LC50: 2,820 mg/l  
Species: Leuciscus idus (Golden orfe)

## 1-Methylimidazole

: static test  
LC50: 100 - 220 mg/l  
Exposure time: 96 h  
Species: Leuciscus idus (Golden orfe)

## Toxicity to daphnia and other aquatic invertebrates

## 1-Methylimidazole

: static test  
EC50: 268 mg/l  
Exposure time: 48 h  
Species: Daphnia magna (Water flea)

## Toxicity to algae

## 1-Methylimidazole

: EC50: 180 mg/l  
Exposure time: 72 h  
Species: Algae

## Toxicity to bacteria

## Tetrahydrofuran

: LC50: > 580 mg/l  
Exposure time: 16 h  
Species: Bacteria

## 1-Methylimidazole

: EC50: 1,100 mg/l  
Exposure time: 17 h  
Species: Bacteria

## Biodegradability

## 1-Methylimidazole

: Result: Not readily biodegradable.  
Value: < 30 %  
Method: OECD 302 B

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**Other adverse effects**

Additional ecological information : Bioaccumulation is unlikely.  
Not readily biodegradable.

**13. DISPOSAL CONSIDERATIONS**

WDPCCL Waste Disposal and Public Cleansing Law : Specially Controlled Industrial Waste

Disposal methods : In accordance with local and national regulations.

**14. TRANSPORT INFORMATION****ADR**

UN/ID No. : UN 2924

Description of the goods : FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(TETRAHYDROFURAN, 1-METHYLIMIDAZOLE)

Class : 3

Packing group : II

Classification Code : FC

Hazard Identification Number : 338

Labels : 3 (8)

**IATA**

UN/ID No. : UN 2924

Description of the goods : Flammable liquid, corrosive, n.o.s.  
(Tetrahydrofuran, 1-METHYLIMIDAZOLE)

Class : 3

Packing group : II

Labels : 3 (8)

Packing instruction (cargo aircraft) : 363

Packing instruction (passenger aircraft) : 352

Packing instruction (passenger aircraft) : Y340

**IMDG**

UN/ID No. : UN 2924

Description of the goods : FLAMMABLE LIQUID, CORROSIVE, N.O.S.  
(TETRAHYDROFURAN, 1-METHYLIMIDAZOLE)

Class : 3

Packing group : II

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Labels : 3 (8)  
EmS Number 1 : F-E  
EmS Number 2 : S-C  
  
Marine pollutant : no

**15. REGULATORY INFORMATION****National regulatory information**

Vessel Safety Law : Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)  
JP VSL

Aviation Law : Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)  
JP AVL

Fire Service Law : Group 4 Flammable liquids  
Type 1 petroleums  
Hazardous rank II  
Water soluble liquid  
Keep away from fire

Poisonous and Deleterious : Not relevant  
Substances Control Law

**Other international regulations****Notification status**

US. Toxic Substances : On TSCA Inventory  
Control Act

Australia. Industrial Chemical : On the inventory, or in compliance with the inventory  
(Notification and Assessment) Act

Canada. Canadian : All components of this product are on the Canadian DSL  
Environmental Protection Act  
(CEPA). Domestic  
Substances List (DSL)

Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory

Korea. Existing Chemicals : On the inventory, or in compliance with the inventory

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## Inventory (KECI)

Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory

China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory

New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory

**16. OTHER INFORMATION**

	<b>HMIS III</b>	<b>NFPA</b>
Health hazard	: 2*	2
Flammability	: 3	3
Physical Hazard	: 1	
Instability	:	1

\* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

**Further information**

none

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group