

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Chlorobenzene (043)

MSDS Number : 000000011340

Product Use Description : Solvent

Manufacturer or supplier's details : Honeywell International Inc.  
101 Columbia Road  
Morristown, NJ 07962-1057

For more information call : 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**  
:  
: (24 hours/day, 7 days/week)

**SECTION 2. HAZARDS IDENTIFICATION****Emergency Overview**

Form : liquid

Color : colourless

Odor : sweet

**Classification of the substance or mixture**

Classification of the substance or mixture : Flammable liquids, Category 3  
Acute toxicity, Category 4, Inhalation

**GHS Label elements, including precautionary statements**

## Chlorobenzene (043)

000000011340

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

Symbol(s)

:



Signal word

: Warning

Hazard statements

: Flammable liquid and vapour.  
Harmful if inhaled.

Precautionary statements

: **Prevention:**  
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.  
Use only outdoors or in a well-ventilated area.  
Wear protective gloves/ eye protection/ face protection.**Response:**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

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.

Call a POISON CENTER or doctor/ physician if you feel unwell.  
Do NOT induce vomiting.

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

**Storage:**Store in a well-ventilated place. Keep cool.  
Store locked up.**Disposal:**

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

**Carcinogenicity**

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

ACGIH: Chlorobenzene 108-90-7  
A3: Confirmed animal carcinogen

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Formula : C<sub>6</sub>H<sub>5</sub>Cl  
Chemical nature : Substance

| Chemical Name | CAS-No.  | Concentration |
|---------------|----------|---------------|
| Chlorobenzene | 108-90-7 | 100.00 %      |

**SECTION 4. FIRST AID MEASURES**

Inhalation : 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. Call a physician.

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.

Eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation develops or persists.

Ingestion : Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Call a physician.

**Notes to physician**

Treatment : Treat symptomatically.

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : Dry chemical  
Foam  
Carbon dioxide (CO<sub>2</sub>)  
Cool closed containers exposed to fire with water spray.
- Unsuitable extinguishing media : Water may be ineffective.  
Do not use a solid water stream as it may scatter and spread fire.
- Specific hazards during firefighting : 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.  
In case of fire hazardous decomposition products may be produced such as:  
Phosgene  
Carbon oxides  
Chloride fumes
- Special protective equipment for firefighters : Wear self-contained breathing apparatus and protective suit.

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions : 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.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and 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

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

courses.

Methods for 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).

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

Handling : Wear personal protective equipment.  
Use only in well-ventilated areas.  
Keep container tightly closed.  
Do not smoke.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and 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**

Requirements for storage areas and containers : 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.  
Store away from incompatible substances.

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

Container hazardous when empty.  
Do not pressurize, cut, weld, braze, solder, drill, grind or  
expose containers to heat or sources of ignition.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

- Protective measures : Ensure that eyewash stations and safety showers are close to the workstation location.
- Engineering measures : Use with local exhaust ventilation.  
Prevent vapour buildup by providing adequate ventilation during and after use.
- 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
- Hand protection : Solvent-resistant gloves  
Gloves must be inspected prior to use.  
Replace when worn.
- Skin and body protection : Wear as appropriate:  
Solvent-resistant apron  
Flame retardant antistatic protective clothing  
If splashes are likely to occur, wear:  
Protective suit
- 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.
- Hygiene measures : When using, do not eat, drink or smoke.  
Wash hands before breaks and immediately after handling the product.  
Keep working clothes separately.  
Do not swallow.  
Avoid breathing vapours, mist or gas.  
Avoid contact with skin, eyes and clothing.

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

**Exposure Guidelines**

| Components    | CAS-No.  | Value                                     | Control parameters    | Update     | Basis  |
|---------------|----------|---|-----------------------|------------|--|
| Chlorobenzene | 108-90-7 | TWA :<br>time<br>weighted<br>average      | (10 ppm)              | 2008       | ACGIH:US. ACGIH<br>Threshold Limit<br>Values   |
| Chlorobenzene | 108-90-7 | PEL :<br>Permissible<br>exposure<br>limit | 350 mg/m3<br>(75 ppm) | 02<br>2006 | OSHA_TRANS:US.<br>OSHA Table Z-1<br>Limits for Air<br>Contaminants (29<br>CFR 1910.1000) |
| Chlorobenzene | 108-90-7 | TWA :<br>time<br>weighted<br>average      | 350 mg/m3<br>(75 ppm) | 1989       | Z1A:US. OSHA<br>Table Z-1-A (29<br>CFR 1910.1000)  |

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                              |                                       |
|------------------------------|---------------------------------------|
| Physical state               | : liquid                              |
| Color                        | : colourless                          |
| Odor                         | : sweet                               |
| pH                           | : Note: no data available             |
| Melting point/freezing point | : -46 °C                              |
| Boiling point/boiling range  | : 132 °C                              |
| Flash point                  | : 82 °F (28 °C)<br>Method: closed cup |

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

|                       |   |                                   |
|-----------------------|---|-----------------------------------|
| Lower explosion limit | : | 1 %(V)                            |
| Upper explosion limit | : | 7.1 %(V)                          |
| Vapor pressure        | : | 11.7 hPa<br>at 20 °C(68 °F)       |
| Vapor density         | : | 3.9                               |
| Density               | : | 1.1058 g/cm <sup>3</sup> at 20 °C |
| Water solubility      | : | Note: negligible                  |
| Ignition temperature  | : | 593 °C                            |
| Molecular weight      | : | 112.56 g/mol                      |

**SECTION 10. STABILITY AND REACTIVITY**

|                                    |   |  |
|------------------------------------|---|--|
| Chemical stability                 | : | Stable under normal conditions.  |
| Possibility of hazardous reactions | : | Hazardous polymerisation does not occur.   |
| Incompatible materials to avoid    | : | Strong oxidizing agents<br>Silver perchlorate<br>Sodium<br>Dimethyl sulfoxide<br>Plastics<br>Rubber and coatings         |
| Hazardous decomposition products   | : | In case of fire hazardous decomposition products may be produced such as:<br>Phosgene<br>Carbon oxides<br>Chloride fumes |



**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

**SECTION 11. TOXICOLOGICAL INFORMATION**

|                           |  |
|---------------------------|--|
| Acute oral toxicity       | : LD50: 2,290 mg/kg<br>Species: rat  |
| Acute inhalation toxicity | : LC50: 13.9 mg/l , vapour<br>Exposure time: 6 h<br>Species: rat   |
| Acute dermal toxicity     | : LD50: > 7,940 mg/kg<br>Species: rabbit   |
| Skin irritation           | : Species: rabbit<br>Result: Mild skin irritation<br>Note: (single exposure)   |
|                           | : Species: rabbit<br>Result: Severe skin irritation<br>Note: (continuous exposure for one week)  |
| Eye irritation            | : Species: rabbit<br>Note: mild transient effects  |
| Repeated dose toxicity    | : Species: rat<br>Application Route: Oral<br>Note: Liver Kidney 5d/wk for 192 days   |
|                           | : Species: dog<br>Application Route: Oral<br>Note: Liver Kidney Gastrointestinal tract Blood effects (death in 4/8 animals) at 272.5 mg/kg/d, 5d/wk for 93 days        |
|                           | : Species: rat<br>Application Route: Inhalation<br>NOAEL (No observed adverse effect level): 200 ppm<br>Note: 7 h/d, 5 d/wk for 32 exposures slight liver effects, 475 |

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

ppm lung, liver and kidney effects; death in guinea pigs, 1000 ppm

: Species: rabbit  
Application Route: Inhalation  
NOAEL (No observed adverse effect level): 200 ppm  
Note: 7 h/d, 5 d/wk for 32 exposures slight liver effects, 475 ppm lung, liver and kidney effects; death in guinea pigs, 1000 ppm

: Species: guinea pig  
Application Route: Inhalation  
NOAEL (No observed adverse effect level): 200 ppm  
Note: 7 h/d, 5 d/wk for 32 exposures slight liver effects, 475 ppm lung, liver and kidney effects; death in guinea pigs, 1000 ppm

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

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity effects**

Toxicity to fish : LC50: 16.9 mg/l  
Exposure time: 96 h  
Species: Fathead minnow

: LC50: 10.4 mg/l  
Exposure time: 96 h  
Species: Oncorhynchus mykiss (rainbow trout)  
Method: OECD Test Guideline 203

Biodegradability  
Chlorobenzene : Result: Not readily biodegradable.  
Value: 15 %  
Method: OECD 301 C

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

**Further information on ecology****SECTION 13. DISPOSAL CONSIDERATIONS**

Disposal methods : Observe all Federal, State, and Local Environmental regulations.

**SECTION 14. TRANSPORT INFORMATION**

**DOT** UN/ID No. : UN 1134  
Proper shipping name : CHLOROBENZENE  
Class : 3  
Packing group : III  
Hazard Labels : 3

**IATA** UN/ID No. : UN 1134  
Description of the goods : CHLOROBENZENE  
Class : 3  
Packaging group : III  
Hazard Labels : 3  
Packing instruction (cargo aircraft) : 366  
Packing instruction (passenger aircraft) : 355  
Packing instruction (passenger aircraft) : Y344

**IMDG** UN/ID No. : UN 1134  
Description of the goods : CHLOROBENZENE  
Class : 3  
Packaging group : III  
Hazard Labels : 3  
EmS Number : F-E, S-D  
Marine pollutant : no

**SECTION 15. REGULATORY INFORMATION****Inventories**

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

US. Toxic Substances Control Act : On TSCA Inventory

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

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

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

Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory

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

**National regulatory information**

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A) : The following component(s) of this product is/are subject to release reporting under 40 CFR 302 when release exceeds the Reportable Quantity (RQ):

Reportable quantity: 100 lbs

: Chlorobenzene 108-90-7

**SARA 302 Components** : SARA 302: No chemicals in this material are subject to the

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

reporting requirements of SARA Title III, Section 302.

- SARA 313 Components** : The following components are subject to reporting levels established by SARA Title III, Section 313:  
: Chlorobenzene 108-90-7
- SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard  
Chronic Health Hazard
- CERCLA Reportable Quantity** : 100 lbs
- California Prop. 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Massachusetts RTK** : Chlorobenzene 108-90-7

**New Jersey RTK** : Chlorobenzene 108-90-7

**Pennsylvania RTK** : Chlorobenzene 108-90-7

**WHMIS Classification** : B2: Flammable liquid  
D1B: Toxic Material Causing Immediate and Serious Toxic Effects  
D2B: Toxic Material Causing Other Toxic Effects  
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

**SECTION 16. OTHER INFORMATION**

|                 | <b>HMIS III</b> | <b>NFPA</b> |
|-----------------|-----------------|-------------|
| Health hazard   | : 2*            | 3           |
| Flammability    | : 3             | 3           |
| Physical Hazard | : 0             |             |

**Chlorobenzene (043)****000000011340**

Version 1.5

Revision Date 03/27/2014

Print Date 09/09/2014

Instability : 0

\* - 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**

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.

Previous Issue Date: 04/19/2013

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group