

DCA16 Iodine Print Enhancer

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product form : Mixture
 Product name : DCA16 Iodine Print Enhancer
 Product code : DCA16

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Crime Scene Investigation

1.3. Details of the supplier of the safety data sheet

SIRCHIE Finger Print Laboratories
 100 Hunter Place
 Youngsville, NC 27596 - USA
 T 919-554-2244; 800-356-7311 - F 919-554-2266; 800-899-8181
<http://www.sirchie.com>

1.4. Emergency telephone number

Emergency number : 1.800.424.9300

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification (GHS-US)**

| | |
|---------------|------|
| Flam. Liq. 2 | H225 |
| Skin Irrit. 2 | H315 |
| Carc. 2 | H351 |
| STOT SE 3 | H336 |
| STOT RE 2 | H373 |

Full text of H-phrases: see section 16

2.2. Label elements**GHS-US labeling****Hazard pictograms (GHS-US)****Signal word (GHS-US)**

: Danger

Hazard statements (GHS-US)

: H225 - Highly flammable liquid and vapor
 H315 - Causes skin irritation
 H336 - May cause drowsiness or dizziness
 H351 - Suspected of causing cancer (Dermal, Inhalation, oral)
 H373 - May cause damage to organs (kidneys, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral)

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use
 P202 - Do not handle until all safety precautions have been read and understood
 P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking
 P233 - Keep container tightly closed
 P240 - Ground/bond container and receiving equipment
 P241 - Use explosion-proof electrical/ventilating/lighting/... equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge
 P260 - Do not breathe fume, mist, spray, vapors
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
 P264 - Wash all exposed skin thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P280 - Wear eye protection, protective gloves
 P302+P352 - If on skin: Wash with plenty of water/...
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

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P308+P313 - If exposed or concerned: Get medical advice/attention
P312 - Call a poison center/doctor/... if you feel unwell
P314 - Get medical advice/attention if you feel unwell
P321 - Specific treatment (see a physician on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use CO2, dry chemical, foam, sand to extinguish
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P403+P235 - Store in a well-ventilated place. Keep cool
P405 - Store locked up
P501 - Dispose of contents/container to local/regional/national/international regulations

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

| Name | Product identifier | % | Classification (GHS-US) |
|---------------------|--------------------|------|--|
| cyclohexane | (CAS No) 110-82-7 | < 90 | Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 |
| chloroform | (CAS No) 67-66-3 | < 9 | Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Carc. 2, H351 STOT RE 2, H373 |
| 1,4-dichlorobenzene | (CAS No) 95-50-1 | < 1 | Not classified |

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid measures after inhalation : Allow victim to breathe fresh air. Allow the victim to rest.

First-aid measures after skin contact : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse.

First-aid measures after eye contact : Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Reactivity : No data available.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition. Direct sunlight.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| DCA16 Iodine Print Enhancer | | |
|---------------------------------|------------------|---------|
| ACGIH | Not applicable | |
| OSHA | Not applicable | |
| chloroform (67-66-3) | | |
| ACGIH | ACGIH TWA (ppm) | 10 ppm |
| ACGIH | ACGIH STEL (ppm) | 10 ppm |
| OSHA | Not applicable | |
| cyclohexane (110-82-7) | | |
| ACGIH | ACGIH TWA (ppm) | 100 ppm |
| ACGIH | ACGIH STEL (ppm) | 100 ppm |
| OSHA | Not applicable | |
| alpha-naphthoflavone (604-59-1) | | |
| ACGIH | Not applicable | |
| OSHA | Not applicable | |

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Exposure controls

Personal protective equipment : Avoid all unnecessary exposure. Gas mask. Gloves. Safety glasses.



Hand protection : Wear protective gloves.
Eye protection : Chemical goggles or safety glasses.
Respiratory protection : Wear appropriate mask.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear, colorless liquid.
Color : Colorless
Odor : chloroform-like
Odor threshold : No data available
pH : No data available
Melting point : No data available
Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Vapor pressure : No data available
Relative density : No data available
Relative vapor density at 20 °C : No data available
Solubility : Insoluble in water.
Water: Solubility in water of component(s) of the mixture :
• : 0.80 g/100ml • : 0.006 g/100ml
Log Pow : No data available
Log Kow : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Viscosity : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under recommended handling and storage conditions (see section 7).

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Open flame. Sparks.

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5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

| chloroform (67-66-3) | |
|----------------------------|--|
| LD50 oral rat | 695 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Experimental value; 908 mg/kg bodyweight; Rat; OECD 401: Acute Oral Toxicity; Experimental value; 1117 mg/kg bodyweight; Rat) |
| LD50 dermal rabbit | > 20000 mg/kg (Rabbit; Experimental value; >3980 mg/kg bodyweight; Rabbit) |
| LC50 inhalation rat (mg/l) | 48 mg/l/4h (Rat; Literature study) |
| ATE US (oral) | 695.000 mg/kg body weight |
| ATE US (vapors) | 48.000 mg/l/4h |
| ATE US (dust, mist) | 48.000 mg/l/4h |

| cyclohexane (110-82-7) | |
|----------------------------|---|
| LD50 oral rat | > 12705 mg/kg (Rat; Equivalent or similar to OECD 401; Experimental value; >5000 mg/kg bodyweight; Rat) |
| LD50 dermal rabbit | > 2000 mg/kg body weight (Rabbit; Experimental value; Equivalent or similar to OECD 402) |
| LC50 inhalation rat (mg/l) | > 19.07 mg/l/4h (Rat; Experimental value) |
| LC50 inhalation rat (ppm) | > 9500 ppm/4h (Rat) |

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Based on available data, the classification criteria are not met

Carcinogenicity : Suspected of causing cancer (Dermal, Inhalation, oral).

| chloroform (67-66-3) | |
|----------------------|--------------------------------------|
| IARC group | 2B - Possibly carcinogenic to humans |

Reproductive toxicity : Not classified

Based on available data, the classification criteria are not met

Specific target organ toxicity (single exposure) : May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) : May cause damage to organs (kidneys, liver) through prolonged or repeated exposure (Dermal, Inhalation, oral).

Aspiration hazard : Not classified

Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

| chloroform (67-66-3) | |
|--------------------------------|---|
| LC50 fish 1 | 18.2 ppm (96 h; Oncorhynchus mykiss) |
| EC50 Daphnia 1 | 6.3 mg/l (504 h; Daphnia magna; Reproduction) |
| LC50 fish 2 | 43.8 mg/l 96 h; Salmo gairdneri (Oncorhynchus mykiss) |
| Threshold limit algae 1 | 185 mg/l (Microcystis aeruginosa; Toxicity test) |
| Threshold limit algae 2 | 1100 mg/l (Scenedesmus quadricauda; Toxicity test) |
| cyclohexane (110-82-7) | |
| LC50 fish 1 | 4.53 mg/l (96 h; Pimephales promelas; Measured concentration) |
| LC50 other aquatic organisms 1 | 10 - 100 mg/l (96 h) |

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| cyclohexane (110-82-7) | |
|---|---|
| EC50 Daphnia 1 | 0.9 mg/l (48 h; Daphnia magna; Static system) |
| LC50 fish 2 | 31 mg/l (96 h; Lepomis macrochirus) |
| EC50 Daphnia 2 | 3.78 mg/l (48 h; Daphnia magna) |
| TLM fish 1 | 57.7 mg/l (96 h; Poecilia reticulata) |
| TLM fish 2 | 32 mg/l (96 h; Pimephales promelas) |
| TLM other aquatic organisms 1 | 10 - 100,96 h |
| Threshold limit other aquatic organisms 1 | 10 - 100,96 h; Protozoa |
| Threshold limit other aquatic organisms 2 | > 50 mg/l |
| Threshold limit algae 1 | 3.428 mg/l (72 h; Selenastrum capricornutum; GLP) |
| Threshold limit algae 2 | 0.925 mg/l (72 h; Selenastrum capricornutum; Biomass) |

12.2. Persistence and degradability

| DCA16 Iodine Print Enhancer | |
|------------------------------------|--|
| Persistence and degradability | Not established. |
| chloroform (67-66-3) | |
| Persistence and degradability | Not readily biodegradable in water. Non degradable in the soil. |
| ThOD | 0.33 - 1.35 g O ₂ /g substance |
| BOD (% of ThOD) | 0.015 - 0.06 % ThOD |
| cyclohexane (110-82-7) | |
| Persistence and degradability | Not readily biodegradable in water. Non degradable in the soil. No (test) data on mobility of the substance available. |
| Biochemical oxygen demand (BOD) | 0.22 g O ₂ /g substance |
| ThOD | 3.425 g O ₂ /g substance |
| BOD (% of ThOD) | < 0.5 % ThOD |

12.3. Bioaccumulative potential

| DCA16 Iodine Print Enhancer | |
|------------------------------------|--|
| Bioaccumulative potential | Not established. |
| chloroform (67-66-3) | |
| BCF fish 1 | 6 (336 h; Lepomis macrochirus) |
| BCF fish 2 | 1.4 - 4.7 (42 days; Cyprinus carpio) |
| BCF other aquatic organisms 1 | 224 (Pecten maximus; Mantle, dry weight) |
| BCF other aquatic organisms 2 | 438 (Modiolus modiolus; Mantle, dry weight) |
| Log Pow | 1.97 (Experimental value; 20 °C) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |
| cyclohexane (110-82-7) | |
| BCF fish 1 | 89 (Roccus saxatilis) |
| BCF fish 2 | 31 - 129 (8 weeks; Cyprinus carpio) |
| Log Pow | 3.09 - 3.79 (Experimental value) |
| Bioaccumulative potential | Low potential for bioaccumulation (BCF < 500). |

12.4. Mobility in soil

| chloroform (67-66-3) | |
|-------------------------------|---|
| Surface tension | 0.0271 N/m (20 °C) |
| Ecology - soil | May be harmful to plant growth, blooming and fruit formation. |
| cyclohexane (110-82-7) | |
| Surface tension | 0.025 N/m (20 °C) |

12.5. Other adverse effects

| | |
|------------------------------|--|
| Effect on the global warming | : No known ecological damage caused by this product. |
| Other information | : Avoid release to the environment. |

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1145 Cyclohexane (FLAMMABLE LIQUID), 3, II

UN-No.(DOT) : UN1145

Proper Shipping Name (DOT) : Cyclohexane
FLAMMABLE LIQUID

Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



Packing group (DOT) : II - Medium Danger

Additional information

Other information : No supplementary information available.

OR

No additional information available

Transport by sea

No additional information available

Air transport

UN-No.(IATA) : UN1145

Proper Shipping Name (IATA) : Cyclohexane

Class (IATA) : 3 - Flammable Liquids

Packing group (IATA) : II - Medium Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

DCA16 Iodine Print Enhancer

Listed on United States SARA Section 313

15.2. International regulations

CANADA

No additional information available

EU-Regulations

DCA16 Iodine Print Enhancer

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Classification according to Regulation (EC) No. 1272/2008 [CLP]

No additional information available

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Carc.Cat.3; R40

F; R11

Xn; R22

Xn; R65

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; R48/20/22
Xi; R38
N; R50/53
R67

Full text of R-phrases: see section 16

National regulations

| |
|--|
| DCA16 Iodine Print Enhancer |
| Listed on IARC (International Agency for Research on Cancer) |

15.3. US State regulations

| | |
|---|-----|
| DCA16 Iodine Print Enhancer() | |
| U.S. - California - Proposition 65 - Carcinogens List | Yes |
| U.S. - California - Proposition 65 - Developmental Toxicity | Yes |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Female | No |
| U.S. - California - Proposition 65 - Reproductive Toxicity - Male | No |

SECTION 16: Other information

Indication of changes

: Revision - See : *.

Data sources

: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information

: None.

Full text of H-phrases:

| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| Asp. Tox. 1 | Aspiration hazard Category 1 |
| Carc. 2 | Carcinogenicity Category 2 |
| Flam. Liq. 2 | Flammable liquids Category 2 |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2 |
| STOT RE 2 | Specific target organ toxicity (repeated exposure) Category 2 |
| STOT SE 3 | Specific target organ toxicity (single exposure) Category 3 |
| H225 | Highly flammable liquid and vapor |
| H302 | Harmful if swallowed |
| H304 | May be fatal if swallowed and enters airways |
| H315 | Causes skin irritation |
| H336 | May cause drowsiness or dizziness |
| H351 | Suspected of causing cancer |
| H373 | May cause damage to organs through prolonged or repeated exposure |

SDS US (GHS HazCom 2012)

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