SECTION 1. IDENTIFICATION

Product name : BENOX® A-75

Other means of identification : No data available

Manufacturer or supplier’s details
Company name of supplier : United Initiators, Inc.
Address : 555 Garden Street
          Elyria OH 44035 USA
          Unit 3 – 363 Broadway, Suite 324
          Winnipeg, MB R3C 3N9 CANADA

Telephone : +1-440-323-3112
Telefax : +1-440-323-2659

Emergency telephone : CHEMTREC US (24h): +1-800-424-9300
                      CHEMTREC WORLD (24h): +1-703-527-3887
                      CANUTEC (24h): 1-613-966-6666

E-mail address of person responsible for the SDS : cs-initiators.nafta@united-in.com

For Transportation Incidents : TERRAPURE EMERGENCY RESPONSE SERVICES (24h):
                               1-800-567-7455

Recommended use of the chemical and restrictions on use
Recommended use : Hardener
                  polymerization initiators

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations
Organic peroxides : Type C
Combustible dust : Category 1
Eye irritation : Category 2A
Skin sensitization : Category 1
Short-term (acute) aquatic hazard : Category 1
Long-term (chronic) aquatic hazard : Category 1
SAFETY DATA SHEET

BENOX® A-75

GHS label elements

Hazard pictograms:

- Flammable
- Oxidising
- Corrosive

Signal Word: Danger

Hazard Statements:

- H242 Heating may cause a fire.
- May form combustible dust concentrations in air.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P234 Keep only in original packaging.
- P240 Ground and bond container and receiving equipment.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash skin thoroughly after handling.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

- P302 + P352 IF ON SKIN: Wash with plenty of water.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337 + P313 If eye irritation persists: Get medical advice/attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.
- P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
- P391 Collect spillage.

Storage:

- P403 Store in a well-ventilated place.
- P410 Protect from sunlight.
- P411 Store at temperatures not exceeding 30 °C/86 °F.
- P420 Store separately.

Disposal:

- P501 Dispose of contents/container to an approved waste disposal plant.
**SAFETY DATA SHEET**

**BENOX®A-75**

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
</table>

**Other hazards**
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture**: Mixture

**Chemical nature**: Organic Peroxide
Solid mixture

**Components**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibenzoyl peroxide</td>
<td>94-36-0</td>
<td>&gt;= 70 - &lt; 75</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES

**General advice**: Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Call a physician immediately.

**If inhaled**: If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
If breathed in, move person into fresh air.

**In case of skin contact**: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash contaminated clothing before re-use.
If on skin, rinse well with water.
If on clothes, remove clothes.
If symptoms persist, call a physician.

**In case of eye contact**: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

**If swallowed**: Keep respiratory tract clear.
Call a physician immediately.

**Most important symptoms and effects, both acute and delayed**: May cause an allergic skin reaction.
Causes serious eye irritation.

**Protection of first-aiders**: First Aid responders should pay attention to self-protection and use the recommended protective clothing.
SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:
- Water spray jet
- Alcohol-resistant foam
- Carbon dioxide (CO2)
- Dry chemical

Unsuitable extinguishing media:
- High volume water jet

Specific hazards during fire fighting:
Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.

The product burns violently.
Flash back possible over considerable distance.
Vapors may form explosive mixtures with air.
The product will float on water and can be reignited on surface water.
Cool closed containers exposed to fire with water spray.

Specific extinguishing methods:
Do not use a solid water stream as it may scatter and spread fire.
Remove undamaged containers from fire area if it is safe to do so.
Use water spray to cool unopened containers.

Further information:
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters:
Wear self-contained breathing apparatus for firefighting if necessary.
Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
- Use personal protective equipment.
- Avoid dust formation.
- Avoid breathing dust.
- Remove all sources of ignition.
- Follow safe handling advice and personal protective equipment recommendations.
- Never return spills in original containers for re-use.
- Treat recovered material as described in the section "Disposal considerations".
Environmental precautions:
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up:
Contact with incompatible substances can cause decomposition at or below SADT.
Clear spills immediately.
Suppress (knock down) gases/vapors/mists with a water spray jet.
To clean the floor and all objects contaminated by this material, use plenty of water.
Soak up with inert absorbent material.
Isolate waste and do not reuse.
Non-sparking tools should be used.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

SECTION 7. HANDLING AND STORAGE

Technical measures:
See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Advice on protection against fire and explosion:
Avoid dust formation.
Provide appropriate exhaust ventilation at places where dust is formed.
Keep away from heat and sources of ignition.
Use only explosion-proof equipment.
Keep away from combustible material.

Advice on safe handling:
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Take precautionary measures against static discharges.
Never return any product to the container from which it was originally removed.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid confinement.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Smoking, eating and drinking should be prohibited in the application area.
Wash thoroughly after handling.
For personal protection see section 8.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Protect from contamination.

Conditions for safe storage:
Avoid impurities (e.g. rust, dust, ash), risk of decomposition.
Electrical installations / working materials must comply with the technological safety standards.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Store in original container.
Keep containers tightly closed in a cool, well-ventilated place.
Store in accordance with the particular national regulations.

Materials to avoid: Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature: 5 - 30 °C

Further information on storage stability: No decomposition if stored normally.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dibenzoyl peroxide</td>
<td>94-36-0</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWAEV</td>
<td>5 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

Engineering measures: Minimize workplace exposure concentrations.

Personal protective equipment

Respiratory protection: In the case of dust or aerosol formation use respirator with an approved filter.

Filter type: Filter type P

Hand protection

Material: butyl-rubber
Break through time: >= 480 min
Glove thickness: 0.5 mm

Remarks: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work.
For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove Wash hands before breaks and at the end of workday.

Eye protection: Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

Hygiene measures: Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: powder
Color: white
Odor: aromatic
Odor Threshold: No data available
pH: No data available
Melting point/range: Decomposition: Decomposes below the melting point.
Boiling point/boiling range: Not applicable
Flash point: Not applicable
Evaporation rate: No data available
Flammability (solid, gas): Not applicable
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapor pressure: No data available
Relative vapor density: No data available
Bulk density: 590 kg/m³ (20 °C)
Solubility(ies)
   Water solubility: 0.0004 g/l insoluble
Solubility in other solvents: soluble
   Solvent: Phthalates
Partition coefficient: n-octanol/water  :  log Pow: 3.2 (20 °C)

Self-Accelerating decomposition temperature (SADT)  :  70 °C
SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.

Viscosity
  Viscosity, dynamic  :  Not applicable
  Viscosity, kinematic  :  No data available

Oxidizing properties  :  The substance or mixture is not classified as oxidizing.
  Organic peroxide

SECTION 10. STABILITY AND REACTIVITY

Reactivity  :  Stable under recommended storage conditions.
Chemical stability  :  Stable under recommended storage conditions.
Possibility of hazardous reactions  :  Dust may form explosive mixture in air.
Conditions to avoid  :  Protect from contamination.
  Contact with incompatible substances can cause decomposition at or below SADT.
  Heat, flames and sparks.
  Avoid confinement.
Incompatible materials  :  Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents
Hazardous decomposition products  :  Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

Components:

Dibenzoyl peroxide:
Acute oral toxicity  :  LD50 (Rat): > 5,000 mg/kg
  Method: OECD Test Guideline 401
  Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity  :  LC50 (Rat): > 24.3 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity: Remarks: No data available

Skin corrosion/irritation
Not classified based on available information.

**Product:**
- Remarks: May cause skin irritation in susceptible persons.

**Components:**

**Dibenzoyl peroxide:**
- Species: Rabbit
- Result: No skin irritation

**Serious eye damage/eye irritation**
Causes serious eye irritation.

**Product:**
- Species: Rabbit
- Result: Eye irritation
- Method: OECD Test Guideline 405
- Remarks: May cause irreversible eye damage.

**Components:**

**Dibenzoyl peroxide:**
- Species: Rabbit
- Result: Irritation to eyes, reversing within 7 days

**Respiratory or skin sensitization**

**Skin sensitization**
May cause an allergic skin reaction.

**Respiratory sensitization**
Not classified based on available information.

**Product:**
- Species: Mouse
- Method: OECD Test Guideline 429
- Result: Causes sensitization.
- Remarks: Causes sensitization.
Components:
Dibenzoyl peroxide:
Routes of exposure : Skin contact
Species : Mouse
Method : Local lymph node assay (LLNA)
Result : May cause sensitization by skin contact.

Germ cell mutagenicity
Not classified based on available information.

Components:
Dibenzoyl peroxide:
Genotoxicity in vitro : Result: negative
Remarks: In vitro tests did not show mutagenic effects
Genotoxicity in vivo : Result: negative
Remarks: In vivo tests did not show mutagenic effects

Carcinogenicity
Not classified based on available information.

Product:
Remarks : negative

Components:
Dibenzoyl peroxide:
Remarks : Not classified due to data which are conclusive although insufficient for classification.

Reproductive toxicity
Not classified based on available information.

Components:
Dibenzoyl peroxide:
Effects on fertility : Species: Rat, male
Application Route: Oral
General Toxicity Parent: NOAEL: 1,000 mg/kg body weight
Method: OECD Test Guideline 422
Species: Rat, female
Application Route: Oral
General Toxicity Parent: NOAEL: 500 mg/kg body weight
Method: OECD Test Guideline 422
Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT-single exposure
Not classified based on available information.
Components:
Dibenzoyl peroxide:
Routes of exposure: Ingestion
Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT-repeated exposure
Not classified based on available information.

Components:
Dibenzoyl peroxide:
Routes of exposure: Ingestion
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity
Product:
Species: Rat
NOAEL: 1,000 mg/kg
Application Route: Oral
Exposure time: 28 d
Method: OECD Test Guideline 422

Aspiration toxicity
Not classified based on available information.

Components:
Dibenzoyl peroxide:
No aspiration toxicity classification

Further information
Product:
Remarks: No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
Components:
Dibenzoyl peroxide:
Toxicity to fish: EC50 (Oncorhynchus mykiss (rainbow trout)): 0.06 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.11 mg/l
Exposure time: 48 h
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Method: OECD Test Guideline 202

Toxicity to algae: EC50 (Pseudokirchneriella subcapitata (green algae)): 0.06 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity): 10

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): EC10 (Daphnia magna (Water flea)): 0.001 mg/l
Exposure time: 21 d
Test Type: semi-static test
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity): 10

Toxicity to microorganisms: EC50 (Bacteria): 35 mg/l

Ecotoxicology Assessment
Acute aquatic toxicity: Very toxic to aquatic life.
Chronic aquatic toxicity: Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

Dibenzoyl peroxide: Biodegradability: Result: Inherently biodegradable.

Bioaccumulative potential

Components:

Dibenzoyl peroxide: Partition coefficient: n-octanol/water: log Pow: 3.2 (20 °C)

Mobility in soil
No data available

Other adverse effects

Product: Additional ecological information: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues: The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of wastes in an approved waste disposal facility.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.
Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UN/RTDG
UN number: UN 3104
Proper shipping name: ORGANIC PEROXIDE TYPE C, SOLID
(DIBENZOYL PEROXIDE)
Class: 5.2
Packing group: Not assigned by regulation
Labels: 5.2

IATA-DGR
UN/ID No.: UN 3104
Proper shipping name: Organic peroxide type C, solid
(Dibenzoyl peroxide)
Class: 5.2
Packing group: Not assigned by regulation
Labels: Organic Peroxides, Keep Away From Heat
Packing instruction (cargo aircraft): 570
Packing instruction (passenger aircraft): 570

IMDG-Code
UN number: UN 3104
Proper shipping name: ORGANIC PEROXIDE TYPE C, SOLID
(DIBENZOYL PEROXIDE)
Class: 5.2
Packing group: Not assigned by regulation
Labels: 5.2
EmS Code: F-J, S-R
Marine pollutant: yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

TDG
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SDS Number: 600000000135
Date of last issue: 02/16/2018
Date of first issue: 10/27/2016

UN number: UN 3104
Proper shipping name: ORGANIC PEROXIDE TYPE C, SOLID (DIBENZOYL PEROXIDE)
Class: 5.2
Packing group: II
Labels: 5.2
ERG Code: 146
Marine pollutant: yes

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

NPRI Components:
Dibenzoyl peroxide
The ingredients of this product are reported in the following inventories:
- DSL (CA): All components of this product are on the Canadian DSL
- AICS (AU): On the inventory, or in compliance with the inventory
- ENCS (JP): On the inventory, or in compliance with the inventory
- ISHL (JP): On the inventory, or in compliance with the inventory
- KECI (KR): On the inventory, or in compliance with the inventory
- PICCS (PH): On the inventory, or in compliance with the inventory
- IECSC (CN): On the inventory, or in compliance with the inventory
- TCSI (TW): On the inventory, or in compliance with the inventory
- TSCA (US): On TSCA Inventory

Canadian lists
No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations
- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- CA BC OEL: Canada. British Columbia OEL
- CA QC OEL: Québec. Regulation respecting occupational health and safe-
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Version 2.1 Revision Date: 11/28/2019 SDS Number: 600000000135 Date of last issue: 02/16/2018

Date of first issue: 10/27/2016

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification. These safety instructions also apply to empty packaging which may still contain product residues.

Sources of key data used to compile the Material Safety Data Sheet:

Revision Date: 11/28/2019

The information provided in this Material 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...
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SDS Number: 60000000135
Date of last issue: 02/16/2018
Date of first issue: 10/27/2016

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.

CA / Z8