1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Material Name: Isosorbide Dinitrate Tablets
Trade Name: CEDOCARD Retard
Chemical Family: Mixture
Intended Use: Pharmaceutical product for the treatment of high blood pressure (hypertension), angina

2. HAZARDS IDENTIFICATION

Appearance: Tablet
Signal Word: WARNING

Statement of Hazard: Suspected of damaging the unborn child.

Additional Hazard Information:
Short Term: May be harmful if swallowed. (based on components). Antihypertensive drug: has blood pressure-lowering properties

Long Term: Animal studies have shown a potential to cause adverse effects on the fetus.
Known Clinical Effects: The most frequent adverse effects seen during clinical use are headache, chest pain, and dizziness.
EU Indication of danger: Toxic to Reproduction; Category 3

EU Hazard Symbols: 

EU Risk Phrases: R63 - Possible risk of harm to the unborn child.

2. HAZARDS IDENTIFICATION

Note: This document has been prepared in accordance with standards for workplace safety, which require the inclusion of all known hazards of the active substance or its intermediates regardless of the potential risk. The precautionary statements and warnings included may not apply in all cases. Your needs may vary depending upon the potential for exposure in your workplace.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EU EINECS/ELINCS List</th>
<th>Classification</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isosorbide Dinitrate</td>
<td>87-33-2</td>
<td>201-740-9</td>
<td>Xn;R22 Repr.Cat.3;R63</td>
<td>20mg or 40mg***</td>
</tr>
<tr>
<td>Talc (non-asbestiform)</td>
<td>14807-96-6</td>
<td>238-877-9</td>
<td>Not Listed</td>
<td>*</td>
</tr>
<tr>
<td>Magnesium stearate</td>
<td>557-04-0</td>
<td>209-150-3</td>
<td>Not Listed</td>
<td>*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>EU EINECS/ELINCS List</th>
<th>Classification</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactose</td>
<td>63-42-3</td>
<td>200-559-2</td>
<td>Not Listed</td>
<td>*</td>
</tr>
<tr>
<td>Artificial color</td>
<td>NOT ASSIGNED</td>
<td>Not listed</td>
<td>Not Listed</td>
<td>*</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>231-791-2</td>
<td>Not Listed</td>
<td>*</td>
</tr>
</tbody>
</table>

Additional Information: * Proprietary
*** per tablet/capsule/lozenge/suppository
Ingredient(s) indicated as hazardous have been assessed under standards for workplace safety.

For the full text of the R phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

Eye Contact: Flush with water while holding eyelids open for at least 15 minutes. Seek medical attention immediately.

Skin Contact: Remove contaminated clothing. Flush area with large amounts of water. Use soap. Seek medical attention.

Ingestion: Never give anything by mouth to an unconscious person. Wash out mouth with water. Do not induce vomiting unless directed by medical personnel. Seek medical attention immediately.

Inhalation: Remove to fresh air and keep patient at rest. Seek medical attention immediately.

Symptoms and Effects of Exposure: For information on potential signs and symptoms of exposure, see Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use carbon dioxide, dry chemical, or water spray.

Hazardous Combustion Products: Formation of toxic gases is possible during heating or fire.

Fire Fighting Procedures: During all fire fighting activities, wear appropriate protective equipment, including self-contained breathing apparatus.
### 6. ACCIDENTAL RELEASE MEASURES

**Health and Safety Precautions:** Personnel involved in clean-up should wear appropriate personal protective equipment (see Section 8). Minimize exposure.

**Measures for Cleaning / Collecting:** Contain the source of spill if it is safe to do so. Collect spilled material by a method that controls dust generation. A damp cloth or a filtered vacuum should be used to clean spills of dry solids. Clean spill area thoroughly.

**Measures for Environmental Protections:** Place waste in an appropriately labeled, sealed container for disposal. Care should be taken to avoid environmental release.

**Additional Consideration for Large Spills:** Non-essential personnel should be evacuated from affected area. Report emergency situations immediately. Clean up operations should only be undertaken by trained personnel.

### 7. HANDLING AND STORAGE

**General Handling:** Minimize dust generation and accumulation. If tablets or capsules are crushed and/or broken, avoid breathing dust and avoid contact with eyes, skin, and clothing. When handling, use appropriate personal protective equipment (see Section 8).

**Storage Conditions:** Store at room temperature in properly labeled containers. Keep away from heat, sparks and flames.
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Talc (non-asbestiform)

ACGIH Threshold Limit Value (TWA) = 2 mg/m³ TWA particulate matter containing no asbestos and <1% crystalline silica

ACGIH OELs - Notice of Intended Changes

Australia TWA = 2.5 mg/m³ TWA containing no asbestos fibers

Austria OEL - MAKs Listed

Belgium OEL - TWA Listed

Bulgaria OEL - TWA Listed

Czech Republic OEL - TWA Listed

Denmark OEL - TWA Listed

Estonia OEL - TWA Listed

Finland OEL - TWA Listed

Greece OEL - TWA Listed

Hungary OEL - TWA Listed

Ireland OEL - TWAs

Netherlands OEL - TWA Listed

OSHA - Final PELs - Table Z-3 Mineral D: = 20 mppcf TWA

Poland OEL - TWA Listed

Portugal OEL - TWA Listed

Romania OEL - TWA Listed

Slovenia OEL - TWA Listed

Spain OEL - TWA Listed

Sweden OEL - TWAs

Magnesium stearate

ACGIH Threshold Limit Value (TWA) = 10 mg/m³ TWA except stearates of toxic metals

Australia TWA = 10 mg/m³ TWA

Belgium OEL - TWA Listed

Ireland OEL - TWAs = 10 mg/m³ TWA except lead stearate

Lithuania OEL - TWA Listed

Portugal OEL - TWA Listed

Spain OEL - TWA Listed

Sweden OEL - TWAs = 5 mg/m³ LLV

The exposure limit(s) listed for solid components are only relevant if dust or mist may be generated.

The purpose of the Occupational Exposure Band (OEB) classification system is to separate substances into different Hazard categories when the available data are sufficient to do so, but inadequate to establish an Occupational Exposure Limit (OEL). The OEB given is based upon an analysis of all currently available data; as such, this value may be subject to revision when new information becomes available.

Isosorbide Dinitrate

Pfizer Occupational Exposure Band (OEB):

OEB3 (control exposure to the range of >10ug/m³ to < 100ug/m³)
Engineering Controls: Engineering controls should be used as the primary means to control exposures. General room ventilation is adequate unless the process generates dust, mist or fumes. Keep airborne contamination levels below the exposure limits listed above in this section.

Personal Protective Equipment: Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

- Hands: Impervious gloves are recommended if skin contact with drug product is possible and for bulk processing operations.
- Eyes: Wear safety glasses or goggles if eye contact is possible.
- Skin: Impervious protective clothing is recommended if skin contact with drug product is possible and for bulk processing operations.
- Respiratory protection: If airborne exposures are within or exceed the Occupational Exposure Band (OEB) range, wear an appropriate respirator with a protection factor sufficient to control exposures to the bottom of the OEB range.

9. PHYSICAL AND CHEMICAL PROPERTIES:

- Physical State: Tablets
- Molecular Formula: Mixture
- Color: No data available.
- Molecular Weight: Mixture

10. STABILITY AND REACTIVITY

- Stability: Stable under normal conditions of use.
- Conditions to Avoid: None known
- Incompatible Materials: As a precautionary measure, keep away from strong oxidizers

11. TOXICOLOGICAL INFORMATION

- General Information: The information included in this section describes the potential hazards of the individual ingredients.

Acute Toxicity: (Species, Route, End Point, Dose)
### Acute Toxicity Comments:
A greater than symbol (>) indicates that the toxicity endpoint being tested was not achievable at the highest dose used in the test.

### Irritation / Sensitization: (Study Type, Species, Severity)

**Isosorbide Dinitrate**

Skin Irritation  
Rabbit  
Mild

### Repeated Dose Toxicity: (Duration, Species, Route, Dose, End Point, Target Organ)

**Isosorbide Dinitrate**

<table>
<thead>
<tr>
<th>Duration</th>
<th>Species</th>
<th>Route</th>
<th>Dose</th>
<th>End Point</th>
<th>Target Organ</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Month(s)</td>
<td>Rat</td>
<td>Oral</td>
<td>480 mg/kg/day</td>
<td>LOAEL</td>
<td>Liver, Central nervous system</td>
</tr>
<tr>
<td>6 Month(s)</td>
<td>Dog</td>
<td>Oral</td>
<td>80 mg/kg/day</td>
<td>LOAEL</td>
<td>Liver, Central Nervous System</td>
</tr>
</tbody>
</table>

### Reproduction & Developmental Toxicity: (Study Type, Species, Route, Dose, End Point, Effect(s))

**Isosorbide Dinitrate**

<table>
<thead>
<tr>
<th>Reproductive &amp; Fertility</th>
<th>Rat</th>
<th>Oral</th>
<th>Dose</th>
<th>End Point</th>
<th>Effect(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>25 mg/kg/day</td>
<td>NOAEL</td>
<td>Fertility</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Embryo / Fetal Development</th>
<th>Rabbit</th>
<th>Intravenous</th>
<th>Dose</th>
<th>End Point</th>
<th>Effect(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10 mg/kg</td>
<td>NOAEL</td>
<td>Not Teratogenic</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Embryo / Fetal Development</th>
<th>Rat</th>
<th>Intravenous</th>
<th>Dose</th>
<th>End Point</th>
<th>Effect(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>10 mg/kg</td>
<td>NOAEL</td>
<td>Not Teratogenic</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Embryo / Fetal Development</th>
<th>Rat</th>
<th>Oral</th>
<th>Dose</th>
<th>End Point</th>
<th>Effect(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>700 mg/day</td>
<td>NOAEL</td>
<td>Fetotoxicity</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Embryo / Fetal Development</th>
<th>Rabbit</th>
<th>Oral</th>
<th>Dose</th>
<th>End Point</th>
<th>Effect(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>220 mg/kg/day</td>
<td>NOAEL</td>
<td>Fetotoxicity</td>
<td></td>
</tr>
</tbody>
</table>

### Genetic Toxicity: (Study Type, Cell Type/Organism, Result)

**Isosorbide Dinitrate**

- **Bacterial Mutagenicity (Ames)**  
  *Salmonella, E. coli*  
  Negative
- **Mammalian Cell Mutagenicity**  
  *Mouse Lymphoma*  
  Negative
- **Chromosome Aberration**  
  *Human Lymphocytes*  
  Negative
- **Micronucleus**  
  *Mouse*  
  Negative
Carcinogen Status: None of the components of this formulation are listed as a carcinogen by IARC, NTP or OSHA. See below

Talc (non-asbestiform) IARC: Group 3 (Not Classifiable)

12. ECOLOGICAL INFORMATION

Environmental Overview: Releases to the environment should be avoided. Environmental properties have not been thoroughly investigated.

13. DISPOSAL CONSIDERATIONS

Disposal Procedures: Dispose of waste in accordance with all applicable laws and regulations. Member State specific and Community specific provisions must be considered. Considering the relevant known environmental and human health hazards of the material, review and implement appropriate technical and procedural waste water and waste disposal measures to prevent occupational exposure and environmental release. It is recommended that waste minimization be practiced. The best available technology should be utilized to prevent environmental releases. This may include destructive techniques for waste and wastewater.

14. TRANSPORT INFORMATION

Not regulated for transport under USDOT, EUADR, IATA, or IMDG regulations.
### 15. REGULATORY INFORMATION

| EU Symbol: | Xn |
| EU Indication of danger: | Toxic to Reproduction; Category 3 |
| EU Risk Phrases: | R63 - Possible risk of harm to the unborn child. |

**OSHA Label:**

**WARNING**

Suspected of damaging the unborn child.

**Canada - WHMIS: Classifications**

**WHMIS hazard class:**

Class D, Division 2, Subdivision A

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**Isosorbide Dinitrate**

- **Inventory - United States TSCA - Sect. 8(b):** Present
- **Australia (AICS):** Present
- **Standard for the Uniform Scheduling for Drugs and Poisons:** Schedule 3
- **EU EINECS/ELINCS List:** 201-740-9

**Lactose**

- **Inventory - United States TSCA - Sect. 8(b):** Present
- **Australia (AICS):** Present
- **EU EINECS/ELINCS List:** 200-559-2

**Talc (non-asbestiform)**

- **Inventory - United States TSCA - Sect. 8(b):** Present
- **Australia (AICS):** Present
- **EU EINECS/ELINCS List:** 238-877-9 EEC No. 456-230-0

**Magnesium stearate**

- **Inventory - United States TSCA - Sect. 8(b):** Present
- **Australia (AICS):** Present
- **EU EINECS/ELINCS List:** 209-150-3

**Water**
Inventory - United States TSCA - Sect. 8(b) Present
Australia (AICS): Present
REACH - Annex IV - Exemptions from the obligations of Register: Present
EU EINECS/ELINCS List 231-791-2

16. OTHER INFORMATION

Text of R phrases mentioned in Section 3

R22 - Harmful if swallowed.
R63 - Possible risk of harm to the unborn child.

Data Sources: Publicly available toxicity information. Safety data sheets for individual ingredients. Pfizer proprietary drug development information.

Prepared by: Toxicology and Hazard Communication
Pfizer Global Environment, Health, and Safety

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End of Safety Data Sheet