SAFETY DATA SHEET

MAGNESIUM MONOPEROXYPHTHALATE TECHNICAL (~90%)

DATE OF ISSUE: 13.04.2017  ISSUE: 1
DATE OF REVISION: -  VERSION: -

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. PRODUCT IDENTIFIER:

COMMERCIAL NAME: MAGNESIUM MONOPEROXYPHTHALATE TECHNICAL (~90%)

RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

Powder with oxidizing and bleaching properties.
Contains: magnesium monoperoxyphthalate hexahydrate

1.2. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

PRODUCER
Innovation Enterprise „IMPULS”
Władysław Fediuk
2, Jelenia str; 80-336 Gdańsk Oliwa, Poland

tel.: (58) 692 29 62; fax.: (58) 683-50-20,
e-mail: impuls@impuls.pl

PRODUCTION PLANT:
34, Zastawna str; 83-000 Pruszcz Gdański, Poland

1.3. EMERGENCY TELEPHONE NUMBER:
(+48 58) 692-29-62, 24-hours

European emergency number: 112,

Unit responsible for the safety data sheet: laboratorium@impuls.pl

SECTION 2 HAZARDS IDENTIFICATION

2.1. CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

Basing on Regulation (EU) nr 1272/2008:

Acute tox. Cat.4 H312 Harmful in contact with skin.
Skin irrit.2 H315 Causes skin irritation.
Eye irrit.2 H319 Causes serious eye irritation
STOT SE 3 H335 May cause respiratory irritation.

2.2. LABEL ELEMENTS

SIGNAL WORD(S):
WARNING

HAZARD PICTOGRAMS:

HAZARD STATEMENTS:
H312 Heating may cause a fire.
H315 Causes skin irritation.
H319 Causes serious eye irritation
H335 May cause respiratory irritation.

PRECAUTIONARY STATEMENTS:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. OTHER HAZARDS

Not established

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Chemical name: magnesium monoperoxyphthalate hexahydrate
CAS Number: 84665-66-7
Content: 90% wag.

SECTION 4 FIRST AID MEASURES

4.1. DESCRIPTION OF FIRST AID MEASURES

GENERAL: Lead out the injured beyond endangered terrain. Send unauthorized people off from the place of the accident. Protect from heat loss.

INHALATION: Avoid fumes inhalation. Irritation of nasal mucosa and trachea may appear. In case of inhalation exposure get the victim out of the unsafe area, ensure access to fresh air and place the victim in a half-sitting position. Ensure peace and prevent from heat loss. Seek the medical advice if the symptoms occur.
SKIN: Remove and clean contaminated clothing and shoes. Immediately wash affected areas with copious amounts of water. If disease’s symptoms appear, seek medical attention. Do not use the soap if the burns occur.

EYE: Immediately flush eyes with running water for at least 15 minutes. If irritation persists, seek medical attention.

INGESTION: If swallowed DO NOT induce vomiting. Rinse mouth with water then give water to drink by small portions. Seek medical attention and show the label.

4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED
Causes severe skin burns and eye damage. If swallowed causes severe respiratory track damage. Health effects of chronic exposure were not specified.

4.3. IDENTIFICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:
If the person is unconscious, make sure the respiratory track is obstructed and place him in the recovery position. Provide medical assistance.

SECTION 5   FIREFIGHTING MEASURES

5.1. EXTINGUISHING MEDIA:
Use extinguishing media proper for features of burning material. Extinguishing media inappropriate due to safety regulations: fire fighting powder, extinguishing foam.

5.2. SPECIAL HAZARD ARISING FROM THE SUBSTANCE OR MIXTURE:
In case of fire liberates dangerous gas oxygen. During the heating it liberates toxic gas.

5.3. ADVICE FOR FIREFIGHTERS:
Use gastight protective clothing and personal breathing apparatus. Do not allow the after-extinguishing water to get into groundwater or surface waters.

SECTION 6   ACCIDENTAL RELEASE MEASURES

6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:
Avoid contact with the substance. Protect eyes. In case of contamination, wash with plenty of water. Avoid raising dust. Do not inhale dust. Use safety goggles and dust filter mask. Take care of good ventilation.

6.2. ENVIRONMENTAL PRECAUTIONS:
Damaged container separate from others and seal. Do not allow the preparation to get into groundwater flow and soil.

6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:
Carefully shovel spills into appropriate containers for disposal. Universal adsorbing, neutral agents can be used. To remove residue, rinse with water. Spilled product shall not be placed again in the original packaging (danger of autonomous degradation).

6.4. REFERENCE TO OTHER SECTIONS:
Spilled preparation must not be put back to the original packaging. Do not allow to contact with flammable substances and mixtures.

SECTION 7   HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING:
Prevent the mixture from contamination, sunlight and heat exposure. Store away from heavy metal ions, trivalent metals, alkali, reductive agents and combustible materials.
Provide good ventilation. Follow the rules of work safety and hygiene concerning chemical substances. Do not allow the preparation to get into sewage system. A training concerning work safety and hygiene in the range of handling with caustic substances is required. Avoid contact with eyes and skin. Use safety goggles and gloves. DO not eat or smoke while using the product.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:
Store the product in dry, cool and well ventilated areas, far from the source of heat. Do not keep with inflammable materials. Keep in tightly closed containers in the temperature between 15 –30°C. Packing should be regularly visually controlled to check tightness.

Substance shall not be stored alongside with: alkali, metal salts, reducing agents, combustible substances. Avoid contact with bases. Isolate from flammable material.

7.3. SPECIFIC END USE(S):
Not defined

SECTION 8   EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. CONTROL PARAMETERS:
VALUE OF MAC (MAXIMUM ACCEPTABLE CONCENTRATION) AND IMAC (INTERIM MAXIMUM ACCEPTABLE CONCENTRATION) OF HAZARDOUS TO HEALTH AGENTS IN WORKING ENVIRONMENT (according to the Regulation of the Health Minister, dated 6th of June 2014 – Dz. U. L 2014, pos. 817, with further changes): not established for this substance

8.2. EXPOSURE CONTROLS:
8.2.1. APPROPRIATE ENGINEERING CONTROLS
Using the preparation requires general ventilation of the room. Ventilating installation should be regularly controled

8.2.2. INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:
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MAGNESIUM MONOPEROXYPHTHALATE
TECHNICAL (~90%)

Keep the preparation well away from foodstuffs. Do not eat or drink and do not smoke during work. Wash hands during stoppages and at the end of work. Do not inhale the dust. Do not let to eye contact. Avoid contact with skin and clothes.

A)  EYE/FACE PROTECTION
Use protective goggles

B)  SKIN PROTECTION:
I)  HAND PROTECTION
Use protective gloves

II) OTHER
Use protective clothes and shoes, acid-resistant

C)  RESPIRATORY PROTECTION
It is recommended to use anti-dust face mask. In case of raising dust use breathing apparatus.

D)  THERMAL HAZARDS
Not defined

8.2.3.  ENVIRONMENTAL EXPOSURE CONTROLS
Product does not pose a threat for environment, but because of its chemical character it is recommended to neutralize the product before channeling to water or waste waters.

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

9.1.  INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES:

<table>
<thead>
<tr>
<th>Value / range</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Appearance: white powder</td>
</tr>
<tr>
<td>c) Odour threshold: not established</td>
</tr>
<tr>
<td>e) Melting point / freezing point: not established</td>
</tr>
<tr>
<td>g) Flash point: not established</td>
</tr>
<tr>
<td>i) Flammability (solid, gas): not established</td>
</tr>
<tr>
<td>k) Vapour pressure: not applicable</td>
</tr>
<tr>
<td>m) Relative density (20°C): 550 ÷ 700 kg/m³ (20°C)</td>
</tr>
<tr>
<td>o) Partition coefficient: n-octanol/water: not established</td>
</tr>
<tr>
<td>q) Decomposition temperature: &gt;60°C</td>
</tr>
<tr>
<td>s) Explosive properties: not established</td>
</tr>
</tbody>
</table>

9.2.  OTHER INFORMATION:

<table>
<thead>
<tr>
<th>Value/range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active oxygen content: ≥ 5.6% of weight</td>
</tr>
</tbody>
</table>

SECTION 10  STABILITY AND REACTIVITY

10.1.  REACTIVITY
STABLE UNDER NORMAL CONDITIONS AND DECLARED STORAGE TEMPERATURE. DANGER OF DECOMPOSITION UNDER THE INFLUENCE OF STRONG HEATING, ALSO DURING CONTACT WITH METALS, ALKALI AND REDUCING AGENTS. DECOMPOSITION AT THE TEMPERATURE ABOVE 60°C

10.2.  CHEMICAL STABILITY
Product kept in defined conditions stays stable during 36 months from production date

10.3.  POSSIBILITY OF HAZARDOUS REACTIONS
Stable under normal conditions. Danger of decomposition under the influence of strong heating, metallic and non-metallic elements, reducing agents, alkali.

10.4.  CONDITIONS TO AVOID
Direct sun, high temperatures, possibility of contamination

10.5.  INCOMPATIBLE MATERIALS
Bases, metals, reducing agents, flame initiators, accidental contaminations.

10.6.  HAZARDOUS DECOMPOSITION PRODUCTS
Water vapour and oxygen due to exothermic decomposition.

SECTION 11  TOXICOLOGICAL INFORMATION

11.1.  INFORMATION ON TOXICOLOGICAL EFFECTS
11.1.2. Mixture
Accidentally inhalation: may cause mucosal and respiratory track irritation (caugh and souls). May cause edema of respiratory track. 
Contact with skin: causes skin burns. Local contact can cause necrosis of the skin and mucous membranes. Complications: scarring. 
Contact with eyes: causes serious burns. Risk of severe eye damage exists. 
Accidentally ingestion: causes severe burns of digestive system. Risk of irreversible health changes exists.

TOXICOLOGICAL DATA OF PREPARATION'S COMPONENTS MENTION DURING CLASSIFICATION OF THE PRODUCT:

<table>
<thead>
<tr>
<th>Magensium Monoperoxyphthalate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11.1.1.a)</strong> ACUTE TOXICITY</td>
</tr>
<tr>
<td>LD50 Oral-rat: 2.300 mg/kg</td>
</tr>
<tr>
<td>LD50 Dermal-rabbit: 2.000 mg/kg</td>
</tr>
<tr>
<td><strong>11.1.1.b)</strong> SKIN CORROSION / IRRITATION</td>
</tr>
<tr>
<td>Rabbit- causes irritation</td>
</tr>
<tr>
<td><strong>11.1.1.c)</strong> SERIOUS EYE DAMAGE / IRRITATION</td>
</tr>
<tr>
<td>Rabbit- moderate eye irritation</td>
</tr>
<tr>
<td><strong>11.1.1.d)</strong> RESPIRATORY OR SKIN SENSITISATION</td>
</tr>
<tr>
<td>No data available</td>
</tr>
<tr>
<td><strong>11.1.1.e)</strong> GERM CELL MUTAGENICITY</td>
</tr>
<tr>
<td>No data available</td>
</tr>
<tr>
<td><strong>11.1.1.f)</strong> CARCINOGENICITY</td>
</tr>
<tr>
<td>IARC: no component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC</td>
</tr>
<tr>
<td><strong>11.1.1.g)</strong> REPRODUCTIVE TOXICITY</td>
</tr>
<tr>
<td>No data available</td>
</tr>
<tr>
<td><strong>11.1.1.h)</strong> STOT – SINGLE EXPOSURE</td>
</tr>
<tr>
<td>May cause respiratory system irritation</td>
</tr>
<tr>
<td><strong>11.1.1.i)</strong> STOT – REPEATED EXPOSURE</td>
</tr>
<tr>
<td>No data available</td>
</tr>
<tr>
<td><strong>11.1.1.j)</strong> ASPIRATION HAZARD</td>
</tr>
<tr>
<td>No data available</td>
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</tbody>
</table>

SECTION 12 ECOLOGICAL INFORMATION
Product has not been classified as harmful for environment. Product does not pose a threat for environment, but because of its chemical character it is recommended to neutralize the product before channeling to water or waste waters. Can modulate of pH of water.

INFORMATION PROVIDED TO EVALUATE THE ENVIRONMENTAL IMPACT:

<table>
<thead>
<tr>
<th>12.1. TOXICITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>toxicity to fish Oncorhynchus mykiss (rainbow trout): LC50 (7 d) : 38,5 mg/l</td>
</tr>
<tr>
<td>toxicity to water invertebrates (Daphnia): EC50 (24h): 37 mg/l</td>
</tr>
<tr>
<td>12.2. PERSISTENCE AND DEGRADABILITY</td>
</tr>
<tr>
<td>Readily biodegradable compound.</td>
</tr>
<tr>
<td>12.3. BIOACCUMULATIVE POTENTIAL</td>
</tr>
<tr>
<td>No data available</td>
</tr>
<tr>
<td>12.4. MOBILITY IN SOIL</td>
</tr>
<tr>
<td>No data available</td>
</tr>
<tr>
<td>12.5. RESULTS OF PBT I VPVB ASSESSMENT</td>
</tr>
<tr>
<td>PBT and vPvB not available</td>
</tr>
<tr>
<td>12.6. OTHER ADVERSE EFFECTS</td>
</tr>
<tr>
<td>No data available</td>
</tr>
</tbody>
</table>

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. WASTE TREATMENT METHODS

PRODUCT: Compliance the rules of the Act dated 14th of December 2012 about wastes (Dz. U. Nr 2013, pos. 21) with further changes. Waste classification in accordance with the Regulation of the Minister of the Environment dated 09th of December 2014 (Dz. U. 2014, poz.1923).

Waste code: 07 06 99 - other not specified wastes; 16 81 01- wastes with dangerous properties
Product should be considered as an inorganic compound and should be utilized in accordance with Local Regulations. Undiluted product cannot be directed into sewage system or sewage treatment plant.
PACKAGING:
Compliance the rules of the Act dated 13th of June 2013 about packaging and its wastes (Dz. U. Nr 2013, pos. 888) with further changes
Waste code: 15 01 02 – plastic packaging
The packaging of repeated usage after rinsing can be used again or recycled

SECTION 14 TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>Overland transport ADR/RID</th>
<th>Air transport ICAO/IATA</th>
<th>Sea transport IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>3108</td>
<td>3108</td>
<td>3108</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>14.2 UN proper shipping name</th>
<th>Overland transport ADR/RID</th>
<th>Air transport ICAO/IATA</th>
<th>Sea transport IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic peroxide type E solid (contains magnesium monoperoxyphthalate hexahydrate) 2nd transport category</td>
<td></td>
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<td></td>
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<tr>
<td>Organic peroxide type E solid (contains magnesium monoperoxyphthalate hexahydrate) 2nd transport category</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>14.3 Transport hazard class(es)</th>
<th>5.2 „Organic Peroxides“</th>
<th>5.2 „Organic Peroxides“</th>
<th>5.2 „Organic Peroxides“</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>14.4 Packing group</th>
<th>Overland transport ADR/RID</th>
<th>Air transport ICAO/IATA</th>
<th>Sea transport IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2nd transport category</td>
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<tr>
<td>2nd transport category</td>
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</tbody>
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<thead>
<tr>
<th>14.5 Environmental hazards</th>
<th>Overland transport ADR/RID</th>
<th>Air transport ICAO/IATA</th>
<th>Sea transport IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper conditions transport and safety rules compliance protect from threat</td>
<td></td>
<td></td>
<td></td>
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<tr>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>14.6 Special precaution for users</th>
<th>Overland transport ADR/RID</th>
<th>Air transport ICAO/IATA</th>
<th>Sea transport IMDG/IMO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow with section 6, 7 and 8 of MSDS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow with section 6, 7 and 8 of MSDS</td>
<td></td>
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<tr>
<td>Follow with section 6, 7 and 8 of MSDS</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</th>
<th>Not applicable</th>
<th>Not applicable</th>
<th>Not applicable</th>
</tr>
</thead>
</table>

SECTION 15 REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC TO THE SUBSTANCE OR MIXTURE:
Regulation of the Minister of Health dated 20th of April 2012 concerning marking of packaging of dangerous substances and preparations and some chemical preparations (Dz. U. Nr 2012, pos. 455) with further changes.
The value of MAC and IMAM is in accordance with the Regulation of the Minister of the Labor and Social Politic dated 06th of December 2014 (Dz. U. Nr 2014, pos. 817) with further changes.
Act dated 14th of December 2012 about waste - Dz. U. Nr 2013, pos. 21, with further changes.
Waste classification in accordance with the Regulation of the Minister of the Environment dated 09th of December 2014 (Dz. U. Nr 2014, pos. 1923 with further changes).
Act dated 13th of June 2013 about packaging and its wastes (Dz. U. Nr 2013, pos. 888) with further changes.

SIGNAL WORD(S):
WARNING

HAZARD STATEMENTS:
H312 Heating may cause a fire.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
PRECAUTIONARY STATEMENTS:
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305 + P351 + P338 IF IN EYES: rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.

15.2. CHEMICAL SAFETY ASSESSMENT:
No chemical safety assessment has been made.

Legend to abbreviations and acronyms used in the safety data sheet
---
ADR  European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE  Acute Toxicity Estimates.
BCF  Bioconcentration Factor - the accumulation of a chemical in or on an organism when the source of chemical is solely water.
CAS no A numerical identifier assigned by Chemical Abstracts Service (CAS).
CLP  Regulation on classification, labelling and packaging of substances and mixtures.
DNEL  Derived no-effect level.
EC50  Effective concentration - effective concentration of a substance which induces a reaction on the level of 50% of the maximal value.
EC no A identifier that is assigned to chemical substances in EINECS or ELINCS inventory.
EINECS  European Inventory of Existing Commercial Chemical Substances.
ELINCS  European List of Notified Chemical Substances.
IATA  International Air Transport Association.
IC50  Half maximal inhibitory concentration causing 50 % inhibition of a given parameter.
IMDG  International Maritime Dangerous Goods Code.
LC50  Lethal concentration - is the concentration required to kill 50% of tested animals after a specified test duration.
LD50  Lethal dose - is the dose required to kill 50% of tested animals after a specified test duration.
NOEC  No observed effect concentration.
MAC(TWA) Maximum Admissible Concentration.
MAC( STEL) Maximum Admissible Short-Term Concentration.
PNEC  Predicted No-Effect Concentration.
RID  Regulations concerning the international railway transport of dangerous goods.
UN no four-digit number that identify material in the registry of hazardous substances of United Nations.
vPvB  Very persistent and very bioaccumulative substance.