

## 1 Identification

### Product identifier

Trade name: 636K9 - Fast Curing Putty-Akemi

### Recommended use and restrictions on use

General use: Filling compound for orthopedic procedures.  
For commercial user only.

### Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal code, city: Burlington, ON L7L 5N5, CA  
Canada

WWW: www.ottobock.ca

Email: info.canada@ottobock.com

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

Corporate headquarters:  
Ottobock SE & Co. KGaA  
Max-Näder-Straße 15  
Duderstadt  
Germany

### Emergency telephone number

**COLLECT, Telephone: (613) 996-6666**

**Transport:**

**CONSULTANK Lutz Harder GmbH (Contract QUALI003)**

**Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)**

## 2 Hazard identification

### Classification

Flammable Liquid 3

Skin Irritation 2

Eye Irritation 2A

Reproductive toxicity 2

Specific Target Organ Toxicity (Repeated Exposure) 1

Aquatic toxicity - chronic 3

Flammable liquid and vapour.

Causes skin irritation.

Causes serious eye irritation.

Suspected of damaging the unborn child.

Causes damage to organs through prolonged or repeated exposure.

Harmful to aquatic life with long lasting effects.

## Information elements

Symbols:



Signal word:

**Danger**

Hazard statements:

Flammable liquid and vapour.  
Causes skin irritation.  
Causes serious eye irritation.  
Suspected of damaging the unborn child.  
Causes damage to organs through prolonged or repeated exposure.  
Harmful to aquatic life with long lasting effects.

Precautionary statements:

Obtain special instructions before use.  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
Wear protective gloves/protective clothing/eye protection/face protection.  
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
IF exposed or concerned: Get medical advice/attention.  
Store in a well-ventilated place. Keep container tightly closed.

## Other hazards known to the supplier with respect to the product

Potentially explosive mixtures may form if adequate ventilation is not provided.  
Inhaling can lead to irritations of the respiratory tract and mucous membrane.  
Higher doses may have a narcotic effect.

## 3 Composition/Information on ingredients

### Mixture

Chemical name:

Filling compound based on unsaturated polyester resins dissolved in styrene.  
Without hardener component.

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 100-42-5	Styrene	12.5 - 25 %	Flammable Liquid 3. Acute Toxicity 4 (inhalative). Skin Irritation 2. Eye Irritation 2A. Reproductive toxicity 2. Specific Target Organ Toxicity (Single Exposure) 3. Specific Target Organ Toxicity (Repeated Exposure) 1. Aspiration Toxicity 1. Aquatic toxicity - chronic 3.
CAS 7779-90-0	Zinc phosphate	1 - 5 %	Aquatic toxicity - acute 1 (M-factor = 1). Aquatic toxicity - chronic 1 (M-factor = 1).

The actual concentration or concentration range is withheld as a trade secret.

### 4 First-aid measures

#### Description of necessary first-aid measures

General information:	Take off immediately all contaminated clothing. If victim is at risk of losing consciousness, position and transport on their side.
In case of inhalation:	Move victim to fresh air, provide oxygen as needed. In case of irregular breathing or respiratory arrest provide artificial respiration. Do not allow victim to become chilled. Keep victim warm. Keep airway open. Consult physician.
In case of swallowing:	Do not induce vomiting. Rinse mouth with water. Immediately get medical attention. Never give anything by mouth to an unconscious person.
In case of skin contact:	Immediately clean with water and soap and, if available, apply a generous amount of polyethylene glycol 400. Seek medical treatment in case of troubles.
In case of eye contact:	Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult physician.

#### Most important symptoms and effects, whether acute or delayed

Irritant. Causes damage to organs through prolonged or repeated exposure.  
Suspected of damaging the unborn child.  
In case of inhalation/After resorption: depression of central nervous system.  
Symptoms: shortage of breath, drowsiness, headache, dizziness, fatigue, unconsciousness.  
Reaction time and coordination may be impaired.  
If higher concentrations occur: Pulmonary edema is possible.  
Other symptoms: nausea, Sweating, Mucous membrane irritation, cough, vomiting.  
Symptoms may occur with delay.  
Inhaling can lead to irritations of the respiratory tract and mucous membrane.  
Higher doses may have a narcotic effect.

#### Indication of immediate medical attention and special treatment needed, if necessary

In case of swallowing, gastric irrigation with activated carbon as an additive.  
Symptoms of poisoning can only emerge after several hours; medical supervision is therefore essential for at least 48 hours.  
Treat symptomatically.

### 5 Fire-fighting measures

#### Suitable and unsuitable extinguishing media

Suitable extinguishing media:	Water spray jet, alcohol resistant foam, extinguishing powder, carbon dioxide.
Unsuitable extinguishing media:	Full water jet

### Specific hazards arising from the product

Flammable liquid and vapour. The vapours are heavier than air and can accumulate in high concentrations on the ground, in cavities, channels and cellars. Potentially explosive vapour/air mixtures may form. Toxic gases may form.

In case of fire may be liberated: hydrogen cyanide, phosphorus compounds, Carbon monoxide and carbon dioxide.

### Special protective equipment and precautions for fire-fighters

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

Heating will lead to pressure increase: danger of bursting and explosion. Use fine water spray to cool endangered containers.

Move undamaged containers from immediate hazard area if it can be done safely.

In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Do not allow fire water to penetrate into surface or ground water.

Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Eliminate all ignition sources if safe to do so. Provide adequate ventilation. Do not breathe vapours. Use a breathing protection against vapours/aerosol. Avoid contact with the substance. Wear appropriate protective equipment. Keep unprotected people away. Use a breathing protection against vapours/aerosol.

Environmental precautions:

Do not allow to enter drains, surface waters, basements or pits. Danger of explosion!

Prevent environmental discharge consistent with regulatory requirements.

### Methods and material for containment and cleaning up

Isolate leaked material using non-flammable absorption agent (e.g. sand, earth, vermiculit, diatomaceous earth) and collect it for disposal in appropriate containers in accordance with the local regulations (see section 13).

Beware of reignition. Thoroughly clean surrounding area.

In case of greater quantities: Collect mechanically (use only explosion-proof equipment when pumping out).

Additional information:

Take precautionary measures against static discharges. Use only non-sparking tools.

Large amounts: Explosion protection required.

Concentrated vapours are heavier than air.

## 7 Handling and storage

### Precautions for safe handling

Advices on safe handling: Provide good ventilation and/or an exhaust system in the work area. Do not breathe vapours. Avoid contact with skin and eyes.

Wear appropriate protective equipment. When using do not eat, drink or smoke.

Guarantee sufficient ventilation during and after use, in order to prevent vapour accumulation.

### Precautions against fire and explosion:

Keep away from sources of ignition - No smoking.  
Take precautionary measures against static discharges.  
The vapours are heavier than air and can accumulate in high concentrations on the ground, in cavities, channels and cellars.  
Use only non-sparking tools.  
In partially filled containers explosive mixtures may form.

### Conditions for safe storage, including any incompatibilities

#### Requirements for storerooms and containers:

Keep only in the original container. Keep in a cool, well-ventilated place. Keep container tightly closed and dry.  
Do not drop, drag or bang the container. Store containers in upright position. Do not allow the product to enter the ground.  
Protect from heat and direct sunlight. Protect from frost.

#### Hints on joint storage:

Do not store together with combustible or self-igniting materials or any highly flammable solids.  
Do not store together with alkalis or acids.  
keep away from oxidizing agents.  
Do not store together with organic peroxides.  
Avoid contact with radical former.  
Keep away from food and drinks.

## 8 Exposure controls/Personal protection

### Control parameters

#### Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
100-42-5	Styrene	Canada: Alberta, OEL 15 min	170 mg/m <sup>3</sup> ; 40 ppm
		Canada: Alberta, OEL 8 hour	85 mg/m <sup>3</sup> ; 20 ppm
		Canada: BC, OEL STEL	20 ppm
		Canada: BC, OEL TWA	10 ppm
		Canada: Ontario, OEL STEL	100 ppm
		Canada: Ontario, OEL TWA	35 ppm
		Canada: Québec, VECD	75 ppm
		Canada: Québec, VEMP	50 mg/m <sup>3</sup>

#### Biological limit values:

CAS No.	Designation	Type	Limit value	Parameter	Sampling
100-42-5	Styrene	USA: ACGIH-BEI, urine	150 mg/g creatinine	Mandelic acid + Phenylglyoxylic acid	end of exposure or end of shift
		USA: ACGIH-BEI, urine	20 µg/L	Styrene in urine	end of exposure or end of shift

### Appropriate engineering controls

Provide good ventilation and/or an exhaust system in the work area.

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharges.

Large amounts: Explosion protection required.

### Individual protection measures, such as personal protective equipment

**Respiratory protection:** Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, self-contained breathing apparatus must be used. Recommended respiratory protection articles: A/P2

**Hand protection:** Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material: Fluororubber (Viton) Breakthrough time: >480 min. Unsuitable materials: nitrile rubber, neoprene. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

**Eye protection:** Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010 according to.

**Body protection:** Flame retardant, antistatic and chemical resistant protective clothing.

**General hygiene considerations:** Use only non-sparking tools. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Do not breathe vapours. Avoid contact with skin, eyes, and clothing. When using do not eat, drink or smoke. Take off immediately all contaminated clothing. Wash hands before breaks and after work. Safety shower and eye wash station should be easily accessible to the work area. Keep away from food, drink and animal feedingstuffs. When using do not eat, drink or smoke.

### Environmental exposure controls

Refer to 6.: Section "Environmental precautions".

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	liquid
	Form: viscous
Colour:	yellow
	light
Odour:	characteristic
Odour threshold:	No data available
Melting point and freezing point:	not determined
Boiling point or initial boiling point and boiling range:	145 °C
Flammability:	Flammable liquid and vapour.
Lower and upper explosion limit or lower and upper flammability limit:	LEL (Lower Explosion Limit): 1.20 Vol-% UEL (Upper Explosive Limit): 8.90 Vol-%
Flash point/flash point range:	32 °C
Evaporation rate:	No data available

Auto-ignition temperature:	not self-igniting
Decomposition temperature:	Decomposition temperature: not determined
pH:	not determined
Kinematic viscosity:	not determined
Dynamic viscosity:	not determined
Water solubility:	insoluble/slightly miscible
Partition coefficient — n-octanol/water:	not determined
Vapour pressure:	at 20 °C: 6 hPa
Density and/or relative density	at 20 °C: 1.84 g/mL
Vapour density:	No data available
Particle characteristics:	Not applicable

### Additional information

Explosive properties:	Product is not explosive. Potentially explosive vapour/air mixtures may form.
Ignition temperature:	480 °C
Solvent content:	14 %
Solid content:	85.5 %
Additional information:	Vapour density: not determined

## 10 Stability and reactivity

Reactivity:	Flammable liquid and vapour. vapours may form explosive mixtures with air.
Chemical stability:	Stable under recommended storage conditions.
Possibility of hazardous reactions:	Heating will lead to pressure increase: danger of bursting and explosion. Potentially explosive vapour/air mixtures may form. Polymerization along with heat production.
Conditions to avoid:	Keep away from heat sources, sparks and open flames. Protect from direct sunlight.
Incompatible materials:	Reacts with peroxides and radical formers. Reacts with acids, alkalis, oxidizing agents.
Hazardous decomposition products:	In case of fire may be liberated: phosphorus compounds, hydrogen cyanide, Carbon monoxide and carbon dioxide. Toxic gases may form.

## 11 Toxicological information

### Information on the likely routes of exposure

No data available

### Health hazard information

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Skin Irritation 2 = Causes skin irritation.

Serious eye damage/irritation: Eye Irritation 2A = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Lack of data.

Germ cell mutagenicity/Genotoxicity: Lack of data.

Carcinogenicity: Lack of data.

Reproductive toxicity: Reproductive toxicity 2 = Suspected of damaging the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Lack of data.

Specific target organ toxicity (repeated exposure): Specific Target Organ Toxicity (Repeated Exposure) 1 = Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard: Lack of data.

Acute toxicity:

LD50 Rat, oral (Styrene):	> 5,000 mg/kg
LD50 Rat, dermal (Styrene):	> 2,000 mg/kg
LC50 Rat, inhalative (Styrene):	11.8 mg/L/ 4h
LC50 Mouse, inhalative (Styrene):	9.5 mg/m³/4 h
LD50 Rat, oral (Trizinkbis(orthophosphat):	> 5,000 mg/kg

Other information: The product has not been tested. The statement is derived from the properties of the single components.

Styrene:

Affects the central nervous system, possible disturbances from: 50 mL/m³.

DFG 2010 (Germany): Substance with a carcinogenic and genotoxic effect from which there is not to be expected an important contribution to the risk of cancer for persons as far as the AGW-value (German WEL) is observed. Classified according to IARC: 2B (possible for humans).

Harmful: danger of serious damage to health by prolonged exposure through inhalation.

Chronic uptake results in damage of: nervous system, lung.

### Symptoms

In case of inhalation: depression of central nervous system.

Symptoms: shortage of breath, drowsiness, headache, dizziness, fatigue, unconsciousness.

Reaction time and coordination may be impaired.

If higher concentrations occur: Pulmonary edema is possible.

Other symptoms: nausea, Sweating, Mucous membrane irritation, cough, vomiting.

Symptoms may occur with delay.

In case of ingestion: If swallowed or in the event of vomiting, risk of entering the lungs.

### General remarks

Polyester resin: May produce an allergic reaction.

## 12 Ecological information

### Ecotoxicity

Aquatic toxicity: Harmful to aquatic life with long lasting effects.  
 Information about Zinc phosphate:  
 Algae toxicity:  
 EC50 *Desmodesmus subspicatus* (green algae): 0.14 mg/L/72h.  
 Daphnia toxicity:  
 EC50 *Daphnia magna* (Big water flea): 0.04-0.86 mg/L/48h.  
 Fish toxicity:  
 LC50 *Oncorhynchus mykiss*: 0.14 - 2.6 mg/L/48h.  
 Information about Styrene:  
 Does not dissolve in water. Floats on water surface.

### Persistence and degradability

Analytical method: BSD  
 Degree of elimination: Styrene >= 60%  
 Evaluation text: Product is highly biodegradable.  
 Further details: Information about Styrene:  
 Biodegradation: 71 %/ 28 d. Product is readily biodegradable.  
 Does not dissolve in water. Floats on water surface.

### Bioaccumulative potential

Partition coefficient — n-octanol/water:  
 not determined

### Mobility in soil

No data available

### Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

## 13 Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Incinerate as hazardous waste according to applicable local, state, and federal regulations.  
 Do not dispose of with household waste.

#### Package

Recommendation: Handle empty containers with care. Incineration may cause explosion. Dispose of waste according to applicable legislation.  
 Non-contaminated packages may be recycled.

### 14 Transport information

#### UN number

TDG: UN1866  
IMDG, IATA-DGR: UN 1866

#### UN proper shipping name

TDG: UN 1866, resin solution  
IMDG, IATA-DGR: UN 1866, RESIN SOLUTION

#### Transport hazard class

TDG: 3  
IMDG: Class 3, Subrisk -  
IATA-DGR: Class 3



#### Packing group

TDG, IMDG, IATA-DGR: III

#### Environmental hazards

Marine pollutant: no

#### Special precautions in connection with transport or conveyance either within or outside the premises

#### Canada: Transportation of Dangerous Goods (TDG)

Explosive limit and limited quantity index: 5 L  
Passenger carrying road or rail index: 60 L

#### Sea transport (IMDG)

EmS: F-E, S-E  
Special Provisions: 223 955  
Limited quantities: 5 L  
Excepted quantities: E1  
Package - Instructions: P001, LP01  
Package - Provisions: PP1  
IBC - Instructions: IBC03  
IBC - Provisions: -  
Tank instructions - IMO: -  
Tank instructions - UN: T2  
Tank instructions - Provisions: TP1  
Stowage and handling: Category A.  
Properties and observations: Miscibility with water depends upon the composition.  
Marine pollutant: no  
Segregation group: none

### Air transport (IATA)

Proper shipping name:	UN 1866, RESIN SOLUTION
Hazard label:	Flamm. liquid
Excepted Quantity Code:	E1
Passenger and Cargo Aircraft: Ltd.Qty.:	Pack.Instr. Y344 - Max. Net Qty/Pkg. 10 L
Passenger and Cargo Aircraft:	Pack.Instr. 355 - Max. Net Qty/Pkg. 60 L
Cargo Aircraft only:	Pack.Instr. 366 - Max. Net Qty/Pkg. 220 L
Special Provisions:	A3
Emergency Response Guide-Code (ERG):	3L

## 15 Regulatory information

### National regulations - Canada

Styrene:	DSL: listed
	Priority Substances List: listed (PSL 1)
Zinc phosphate:	DSL: listed

### Further regulations, limitations and legal requirements

No data available

## 16 Other information

Text for labelling:	Contains Styrene.
Revision date:	17/12/2025
Date of first version:	26/10/1994
Reason of change:	General revision: Safety Data Sheet according to Hazardous Products Regulations (HPR) 2022
	General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

### Abbreviations and acronyms:

Acute Toxicity: Acute toxicity  
Aquatic toxicity - acute: Hazardous to the aquatic environment - acute  
Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
AS/NZS: Australian Standards/New Zealand Standards  
Aspiration Toxicity: Aspiration toxicity  
CAS: Chemical Abstracts Service  
CFR: Code of Federal Regulations  
CLP: Classification, Labelling and Packaging  
DMEL: Derived minimal effect level  
DNEL: Derived no-effect level  
DSL: Domestic Substances List  
EC: European Community  
EC50: Effective Concentration 50%  
EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
EN: European Standard  
EQ: Excepted quantities  
Eye Irritation: Eye irritation  
Flammable Liquid: Flammable liquid  
IARC: International Agency for Research on Cancer  
IATA: International Air Transport Association  
IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
IMDG Code: International Maritime Dangerous Goods Code  
IMO: International Maritime Organization  
LC50: Median lethal concentration  
LD50: Lethal dose 50%  
LEL: Lower Explosion Limit  
MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
M-factor: Multiplication factor  
OEL: Occupational Exposure Limit Value  
OSHA: Occupational Safety and Health Administration  
PBT: Persistent, bioaccumulative and toxic  
PNEC: Predicted no-effect concentration  
PSL: Priority Substances List  
Reproductive toxicity: Reproductive toxicity  
Skin Irritation: Skin irritation  
STOT RE: Specific target organ toxicity - repeated exposure  
STOT SE: Specific target organ toxicity - single exposure  
TDG: Transportation of Dangerous Goods Regulation in Canada  
TLV: Threshold Limit Value  
TRGS: Technical Rules for Hazardous Substances  
TSCA: Toxic Substance Control Act  
UN: United Nations  
vPvB: Very persistent and very bioaccumulative  
WEL: Workplace Exposure Limit

### Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.