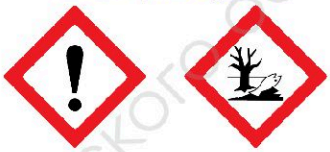
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HARZ Labs
MATERIALS FOR 3D PRINTING

HARZ Labs Industrial Flex

Material safety data sheet (MSDS)
according to Regulation (EC) No 1907/2006 (REACH)
Version 1.3 / EN
26 November 2018

Hazard pictograms



Signal word: Carefully

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CONTENT

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING 3
SECTION 2: HAZARDS IDENTIFICATION 3
SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS 4
SECTION 4: FIRST AID MEASURES 4
SECTION 5: FIREFIGHTING MEASURES 5
SECTION 6: ACCIDENTAL RELEASE MEASURES 6
SECTION 7: HANDLING AND STORAGE 6
SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION 7
SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES 7
SECTION 10: STABILITY AND REACTIVITY 8
SECTION 11: TOXICOLOGICAL INFORMATION 9
SECTION 12: ECOLOGICAL INFORMATION 10
SECTION 13: DISPOSAL CONSIDERATIONS 11
SECTION 14: TRANSPORT INFORMATION 11
SECTION 15: REGULATORY INFORMATION 11
SECTION 16: ADDITIONAL INFORMATION 11

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

1.1 Product identifier

Product Name	HARZ Labs "Industrial Flex"
CAS #	Mixture

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

Identified uses	Resin for 3D printing tough dental models on stereolithographic 3D printers. **NOT FOR INTRAORAL USE!**

1.3 Details of the supplier of the safety data sheet

Company Name	HARZ Labs LLC.
Company Address	Ulitsa Tvardovskogo, 8 b.1, Moscow, 123458
Contact Name	Adamov Andrey Vladimirovich
Phone / Fax	+74952910200
Email	info@harzlabs.ru

1.4 Emergency telephone number

+74952910200

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008	Skin sensitization, category 1B Chemical products with chronic aquatic toxicity, class 2

2.2 Label elements

Hazard pictograms



Signal word	Carefully
Hazard statements	H317: May cause an allergic skin reaction H411: This is toxic to aquatic organisms with long-term effects
Precautionary statements	P261: Avoid breathing dust/fume/gas/mist/vapours/ substances in an atomized state P272: Do not remove contaminated clothing from the workplace P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye / face protection P302 + P352: If on skin: Wash with plenty of soap and water

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P333 + P313: if skin irritation or rash occurs, seek medical advice
P321: Application of special measures (see label information)
P363: Wash contaminated clothing before use
P391: collect spillage
P501: Dispose of contents in accordance with Federal regulations

2.3 Other hazards

Product does not contain any PBT or vPvB substances

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Not applicable

3.2 Mixtures

Substance name	EC No	CAS No	Classification	Concentration
Urethane methacrylate oligomer*	-	-	GHS07 GHS09 Warning Skin Sens. 1B; H317 Aquatic Chronic 2; H411	50-70% **
2-hydroxypropyl methacrylate	212-782-2	868-77-9	GHS07 Warning Eye Irrit. 2; H319 Skin Sens. 1B; H317	30-50% **
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	278-355-8	75980-60-8	GHS09 Warning Aquatic Acute 4; H413, Skin Sens. 1; H317	1-5% **

* The exact name of the components, CAS number, EC number are not provided, as they are a trade secret of the manufacturer (supplier).
** The exact percentage of the components is not provided, as it is a trade secret of the manufacturer (supplier).

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General information Get medical attention if required.

Inhalation Remove victim to fresh air and keep at rest in a comfortable for breathing. Do not block the access of air. Loosen tightly fitting pieces of clothing, such as a collar, tie, belt, or

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	waistband. If breathing is difficult, breathing, qualified personnel should give oxygen. In case of respiratory arrest, use artificial respiration and seek medical advice immediately.
Skin contact	Change contaminated clothing. After contact with skin, wash with plenty of water and soap for 10 minutes. If skin irritation or rash occurs get medical help.
Eye contact	Rinse your eyes, flush eyes with plenty of water for 15 minutes in a well open eye slit. Remove contact lenses if you use them and if it is easy to do. Continue rinsing eyes. If irritation persists, consult your doctor.
Ingestion	Rinse your mouth, drink 1.5-2 cups of warm water with activated charcoal, saline laxative. Do not induce vomiting unless required to do so by medical personnel. In case of spontaneous vomiting, keep head below hips to prevent breathing vomit into the lungs. To seek medical help. Do not induce vomiting in an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation	Not installed
Skin contact	May cause an allergic skin reaction. Side effects in case of prolonged contact: redness, irritation, rash.
Eye contact	Not installed.
Ingestion	Not installed.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically. If the products of decay during combustion got into the respiratory system, symptoms may occur later. The victim may need medical supervision within 48 hours/
Specific treatments	No specific treatment.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Use carbon dioxide, powder, foam, fine water.
Unsuitable extinguishing media	Do not use direct water jets.

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products	Fire and explosion proof.

5.3 Advice for fire-fighters

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Special protective actions for fire-fighters	During a fire, promptly isolate the scene by removing all persons from the vicinity of. Use normal fire fighting procedures not forgetting about the danger that can come from other materials. For cooling of the closed containers which are in the fire center, to use the sprayed water. Hold on to the windward side. Collect contaminated fire fighting water separately. It is unacceptable to enter the sewer system
Special protective equipment for fire-fighters	In case of fire it is necessary to wear a self-contained breathing apparatus (SCBA) and a full set of protective clothing that meets the standard EN 469.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	Forms a slippery surface at spill. Clean up leaks immediately to prevent falling on slippery surfaces. To eliminate sources of sparks and flames. Avoid contact.
For emergency responders	Use proper PPE as indicated in Section 8.

6.2 Environmental precautions

Environmental precautions	Do not allow to enter waste water, groundwater. Inform the relevant organizations in case of damage to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	Absorb with vermiculite or other inert absorbent materials. Send for disposal (see Section 13). Spill area, wash with warm water using chemical cleaners.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures	If necessary, use personal protective equipment (see Section 8). Do not eat, drink or smoke during use of product. Wash hands before breaks and after work

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions	Store in the closed original container in a cool, dry well-ventilated place away from incompatible materials, direct sunlight, sources of ignition and heat.
Packaging materials	Metal or plastic container

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7.3 Specific end uses

Recommendations	Use only for its intended purpose in accordance with the instructions for use and/or packing instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Exposure limit values	No components with occupational exposure limits.

8.2 Exposure controls

Appropriate Engineering Measures	Facilities must be provided by a system of local and General ventilation. Work with the product in a well-ventilated area. Normal precautions should be taken when handling chemicals.
Individual protection measures, such as personal protective equipment	
Eye and face protection	It is recommended to use safety goggles according to EN 166 in case of risk of splashing.
Skin protection	Protective rubber or neoprene gloves according to EU 89/686/EEC and standard EN 374.
Body Protection	Working protective clothing with long sleeves.
Respiratory protection	Not required in the presence of good ventilation. When working with the product for a long time at elevated temperatures, it is recommended to use full face masks equipped with combined filters or filters of ABEK (EN 14387).
Environmental exposure controls	Do not empty into drains
Hygiene Measures	To maintain the work place clean. Do not eat, drink or smoke while working. Wash hands before breaks and at the end of the working day. Take off contaminated clothing and wash before reuse.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Colour	Transparent or opaque liquid, depending on the color
Odour	Not odour
pH	No data available
Melting point/Freezing point	No data available

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Initial boiling point/boiling range	No data available
Flash point	>100°C
Evaporation rate	No data available
Flammability Limits	No data available
Explosive limits	No data available
Vapour pressure	No data available
Vapour density	Not applicable
Relative Density	1.0 – 1.2 g/ml
Solubility(ies)	Insoluble
Partition coefficient Octanol/Water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity @20±2°C	500-800 mPa*s
Explosive properties	Non-explosive
Oxidizing Properties	No
Possibility of hazardous reactions	Not applicable

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

There are no hazardous reactions in compliance with the requirements/instructions for storage and use

10.2 Chemical stability

Product is stable, if the regulations/notes for storage and handling

10.3 Possibility of hazardous reactions

None under normal processing

10.4 Conditions to avoid

Exposure to open fire and high temperatures, direct sunlight and water. It is polymerized under the influence of white light, ultraviolet radiation and when heated

10.5 Incompatible materials

Strong acids (including inorganic), alkalis, peroxides, amines, organic sulfur compounds, heavy metals, oxidizing agents, reducing agents, bases, alcohols, initiators of radical polymerization

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10.6 Hazardous decomposition products

In the case of compliance with the regulations/notes for storage and use, hazardous decomposition products are not highlighted. In case of fire: see Section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity No acute toxicity - based on component data:

Substance name	EC №	CAS №	Test
Urethane methacrylate oligomer*	-	-	If swallowed: LD50>5000 mg / kg (rats) If inhaled: Not applicable. In case of skin contact: LD50>2000 mg / kg (rats)
2-hydroxypropyl methacrylate	213-090-3	923-26-2	If swallowed: LD50>5000 mg / kg (rats) If inhaled: No data available. In case of skin contact: LD50>5000 mg / kg (rats)
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	278-355-8	75980-60-8	If swallowed: LD50>2500 mg / kg (rats) If inhaled: LC50>1 mg / l (rats, 4 h) In case of skin contact: LD50>2000 mg / kg (rats)

Skin corrosion/irritation Not irritating
Serious eye damage/eye irritation Not irritating
Respiratory or skin sensitisation May cause an allergic skin reaction
Germ cell mutagenicity Not classified
Carcinogenicity IARC, NTP, OSHA, ACGIH: Not listed by IARC
Reproductive toxicity Not classified
STOT - SE Not classified
STOT - RE Not classified
Aspiration hazard No data available

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SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity Acute toxicity for aquatic organisms is missing, has chronic toxicity for algae and cyanobacteria – based on data on the components

Substance name	EC №	CAS №	Toxicity to fish	Toxicity to invertebrates	Toxicity to algae and cyanobacteria	Toxicity to microorganisms
Urethane methacrylate oligomer*	-	-	Danio rerio LC50 (96h) =10,1 mg/l	Daphnia magna EC50 (48h) >1,2 mg/l	Desmodesmus subspicatus ErC50 (72h) =0,68 мг/л NOErC(72h) =0,21 мг/л	NOEC (14d) ≥36,1 mg/l
2-hydroxypropyl methacrylate	213-090-3	923-26-2	Oryzias latipes LC50 (96h) >100 mg/l	Daphnia magna EC50 (48h) >380 mg/l	Selenastrum capricornutum EC50 (72ч) =836 мг/л	–
Diphenyl (2,4,6-trimethylbenzoyl) phosphine oxide	278-355-8	75980-60-8	Danio rerio LC50 (96h) =24 mg/l	Daphnia magna EC50 (48h) =53.9 mg/l	Desmodesmus subspicatus EC50 (72h) =17,3 mg/l NOEC(72h) =0,7 mg/l	Activated sludge EC50 (3h) >100 mg/l

12.2 Persistence and Degradability

Biodegradation No data available

12.3 Bioaccumulative potential

Bioaccumulative potential No data available

Partition coefficient It has low mobility in the soil

12.4 Mobility in soil

Mobility Is not likely mobile in the environment due its low water solubility

12.5 Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB substances

12.6 Other adverse effects

No data available

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SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product / Packaging disposal For utilization it is necessary to contact the relevant company. Otherwise, disposal is carried out in accordance with Federal environmental regulations

Contaminated packaging Dispose of the package as well as the contents

SECTION 14: TRANSPORT INFORMATION

ADR/RID Not regulated
IMDG/IMO Not regulated
ICAO/IATA Not regulated
ADN Not regulated

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations EU Regulation (EC) No 1907/2006 (REACH)
EU Regulation (EC) No 1272/2008 (CLP)

Other EU regulations Directive 89/686/EEC: personal protective equipment.
ISO EN 374-1:2016: Gloves that protect against chemicals and microorganisms. Part 1. Terminology and requirements for gloves for protection against chemicals.
EN 166: 2002: personal eye protection. General technical requirements.
EN 469: 2005: protective clothing for firefighters. Requirements for protective clothing for firefighters.
EN 14387:2004+A1:2008: means of individual protection of respiratory organs. The gas filters and combined. General technical requirements. Test method. Marking

15.2 Chemical Safety Assessment

No data available

SECTION 16: ADDITIONAL INFORMATION

16.1 complete list of H-phrases

H317: May cause an allergic skin reaction

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H319: Causes serious eye irritation
H402: Harmful to aquatic life
H411: Toxic to aquatic organisms with long-term effects

16.2 Abbreviations and acronyms

CAS: Chemical Abstracts Service (division of the American Chemical Society)
EC: European Community number
ACGIH: American Conference of Governmental Industrial Hygienists
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
vPvB: Very persistente and very bioaccumulative
PBT: Polybutylene Terephthalate
PPE: Personal protective equipment
SCBA: Self-contained breathing apparatus
EL50: 50% Effect Loading
LC50: Median lethal concentration
LD50: Median lethal dose
LL50: 50% Lethal Loading
NOEC: No Observable Effect Level
bw: body weight
STOT SE: Specific target organ toxicity - single exposure
STOT RE: Specific target organ toxicity - repeated exposure
ADR/RID: Accord Dangereuses Route/International Carriage of Dangerous Goods by Rail
IMDG/IMO: International Maritime Dangerous Goods/International Maritime Organisation
ICAO/IATA: International Civil Aviation Organization/International Air Transport Association
ADN: International Carriage of Dangerous Goods by Inland Waterways

16.3 Training advice

Read the safety data sheet before using the product

16.4 Further information

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