Trade name: INSU200™ WC# 80012117

SECTION 1: Identification

Product identifier used on the label:
Product Name: **INSU200™**

Other means of identification:
Product Code Number: Not Applicable

Recommended use of the chemical and restrictions on use:
Recommended use: 3D printing for electronics
Recommended restrictions: Uses other than as recommended above

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party:

Company Name: Nano Dimension
Company Address: 2 Ilan Ramon St.
Ness-Ziona Science Park
Ness Ziona 7403635, Israel
Company Telephone: +972-737-509142
Company Contact Name: Smitha Salama

Emergency phone number: **M: 972 54 6525434 T: 972 73 750 1296**

Poison Center Information: American Association of Poison Control Centers.
Poison Help line - 1-800-222-1222 (24/7)
Website - PoisonHelp.org

SECTION 2: Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:
Physical hazards
None known

Health hazards
Skin sensitization, category 1
Serious eye damage, category 1
Reproductive toxicity, category 1B

Environmental hazards
Not adopted under OSHA paragraph (d) of §1910.1200

GHS Signal word: DANGER

GHS Hazard statement(s):

May cause an allergic skin reaction
Causes serious eye damage
May damage fertility or the unborn child

GHS Hazard symbol(s):

GHS Precautionary statement(s):

Prevention:

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing dust/fume/gas/mist/ vapors/spray.
- Contaminated work clothing must not be allowed out of the workplace
- Wear protective gloves/protective clothing/eye protection
- Mask required during maintenance operation, when operating with open door of printer

Response:

- If on skin: Wash with plenty of water
- 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.
- Immediately call a poison center/doctor
- Specific treatment (see sections 4 to 8 on this SDS and any further information on the label).
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.

Storage:

- Store locked up

Disposal:

- Dispose of contents/container to an approved disposal site in accordance with local/regional/national/ international regulations

Hazard(s) not otherwise classified (HNOC):
None known.

Percentage of ingredient(s) of unknown acute toxicity:
18% of the mixture consists of ingredients of unknown acute toxicity (dermal).
95% of the mixture consists of ingredients of unknown acute toxicity (inhalation).

SECTION 3: Composition/information on ingredients

Mixture:

Chemical name	CAS#	Concentration (weight %)
Acrylate monomer 1	Proprietary	20-60%
Acrylate monomer 2	Proprietary	10-30%
Solvent	Proprietary	20-40%
Photoinitiator 1	Proprietary	< 1%
Photoinitiator 2	Proprietary	< 2%
Photoinitiator 3	Proprietary	< 2%
Methacrylic oligomer	Proprietary	1-15%

Note: The chemical name and CAS number has been withheld in accordance with the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.

SECTION 4: First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Seek medical advice.

Skin contact: Remove contaminated clothing. Wash with water and soap and rinse thoroughly. Seek medical advice if irritation or pain develops.

Eye contact: In case of eye contact, rinse with plenty of water for at least 15 minutes. If irritation from exposure to vapor develops, move to fresh air. Get medical attention if symptoms develop.

Ingestion: Do NOT induce vomiting. Get medical attention immediately. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed:
May cause an allergic skin reaction. Causes serious eye damage. May damage fertility or the unborn child.

Indication of immediate medical attention and special treatment needed:
If any symptoms are observed, contact a physician and give them this SDS sheet. Provide general supportive measures and treat symptomatically. Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance.

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media:
Suita6ble extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Not expected to be flammable. Use extinguishing media suitable for the surrounding area.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):
Not expected to be flammable. In the case of a fire, consider the surrounding area.
Hazardous combustion products may include the following substances: Carbon monoxide, Carbon dioxide (CO2), Nitrous gases (NOx), Phosphorus oxides, Hazardous organic compounds.

Special protective equipment and precautions for fire-fighters:
Wear self-contained breathing apparatus and protective clothing. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).
Keep out of drains, surface waters and soil against pollution.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:
No action shall be taken involving any personal risk or without suitable training. Keep unnecessary personnel away from and upwind of spill/leak. Wear appropriate personal protective equipment (refer to Section 8 Exposure controls/ personal protection) and avoid inhalation or contact with eyes and skin.

Methods and materials for containment and cleaning up:
Large Spills: Stop the flow of material, if safe to do so. Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

Small Spills: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal. For waste disposal, see section 13 of the SDS.

SECTION 7: Handling and storage

Precautions for safe handling:

Avoid breathing mist or vapor. Avoid contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibles:
Store in a cool, dry place out of direct sunlight. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure controls/personal protection

OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available.

US OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200) (Table Z-1 Limits for Air Contaminants):		
Substance	**PEL-TWA (8 hour)**	**PEL-STEL (15 min)**
Acrylate monomer 1	No data available	No data available
Acrylate monomer 2	No data available	No data available
Solvent	No data available	No data available
Photoinitiator 1	No data available	No data available
Photoinitiator 2	No data available	No data available
Photoinitiator 3	No data available	No data available
Methacrylic oligomer	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	**TLV-TWA (8 hour)**	**TLV-STEL (15 min)**
Acrylate monomer 1	No data available	No data available
Acrylate monomer 2	No data available	No data available

US ACGIH Threshold Limit Values		
Substance	**TLV-TWA (8 hour)**	**TLV-STEL (15 min)**
Solvent	No data available	No data available
Photoinitiator 1	No data available	No data available
Photoinitiator 2	No data available	No data available
Photoinitiator 3	No data available	No data available
Methacrylic oligomer	No data available	No data available

Appropriate engineering controls:
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.
If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station. Eye wash fountain and emergency showers are recommended. Concentrations should be monitored hazardous substances in the workplace in accordance with recognized test methods. Mode, method, type and frequency of testing and measurement of harmful factors in the working environment should meet the requirements of local/regional/national laws.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear safety glasses with side shields (or goggles). Use equipment for eye protection tested and approved under NIOSH standards.

Skin and hand protection: Wear appropriate chemical resistant gloves. The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. The selected protective gloves have to satisfy the specifications of ASTM F739.

Respiratory protection:
Use a chemical respirator with organic vapor cartridge and full facepiece only when exposed to vapours .
During maintenance or when working with printer open doors mask is required.
Use respirators and components tested and approved under appropriate government standards such as NIOSH or MSHA-approved respiratory protection

General hygiene considerations: The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Wash hands after use.

SECTION 9: Physical and chemical properties

Appearance (physical state, color, etc.):	
Physical state:	Liquid
Color:	Clear yellowish
Odor:	Acrylic odor
Odor threshold:	Not determined
pH:	Not determined
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	Not determined
Flash point:	Not determined
Evaporation rate:	Not determined
Flammability (solid, gas):	Not expected to be flammable
Upper/lower flammability or explosive limits	
Flammability limit – lower %):	Not determined
Flammability limit – upper (%):	Not determined
Explosive limit – lower (%):	Not determined
Explosive limit – upper (%):	Not determined
Vapor pressure:	Not determined
Vapor density:	Not determined
Relative density:	Not determined
Solubility (ies):	Not determined
Partition coefficient (n-octanol/water):	Not determined
Auto-ignition temperature:	Not determined
Decomposition temperature:	Not determined
Viscosity:	Not determined

SECTION 10: Stability and reactivity

Reactivity:	No hazardous reactions anticipated under normal storage and handling conditions.

Chemical stability: Stable under normal ambient and anticipated conditions of use

Possibility of hazardous reactions: None expected

Conditions to avoid: Avoid heat, sparks, open flames and other ignition sources. Avoid high temperatures. Contact with incompatible materials.

Incompatible materials: Materials to avoid include Strong acids, Strong bases, Strong oxidizers.

Hazardous decomposition Products: No decomposition if used and stored according to specifications. In case of fire, the following may be formed: Carbon monoxide, Carbon dioxide (CO2), Nitrous gases (NOx), Phosphorus oxides, Hazardous Organic compounds.

SECTION 11: Toxicological information

Information on likely routes of exposure:

Inhalation: Expected to be a route of exposure

Ingestion: Expected to be a route of exposure

Skin: Expected to be a route of exposure

Eyes: Expected to be a route of exposure

Symptoms related to the physical, chemical, and toxicological characteristics:
May cause an allergic skin reaction. Causes serious eye damage. May damage fertility or the unborn child.

Delayed and immediate effects and chronic effects from short or long-term exposure:
Other than the symptoms above, no further effects are known.

Numerical measures of toxicity (such as acute toxicity estimates):

Acute toxicity: Not expected to cause acute toxicity

Substance	Test Type (species)	Value
Acrylate monomer 1	LD_{50} Oral (Rat)	> 2000 mg/kg
	LD_{50} Dermal (Rabbit)	> 2000 mg/kg
	LC_{50} Inhalation (Rat)	None known
Acrylate monomer 2	LD_{50} Oral (Rat)	2000 mg/kg
	LD_{50} Dermal (Rabbit)	None known
	LC_{50} Inhalation (Rat)	None known
Solvent	LD_{50} Oral (Rat)	2340 mg/kg
	LD_{50} Dermal (Rabbit)	5400 mg/kg
	LC_{50} Inhalation (Rat)	None known

Photoinitiator 1	LD_{50} Oral (Rat)	> 5000 mg/kg
	LD_{50} Dermal (Rabbit)	> 2000 mg/kg
	LC_{50} Inhalation (Rat)	>= 0 mg/L air (7h)
Photoinitiator 2	LD_0 Oral (Rat)	> 2000 mg/kg
	LD_0 Dermal (Rabbit)	> 2000 mg/kg
	LC_0 Inhalation (Rat)	None known
Photoinitiator 3	LD_0 Oral (Rat)	> 2000 mg/kg
	LD_0 Dermal (Rabbit)	> 2000 mg/kg
	LC_{50} Inhalation (Rat)	None known
Methacrylic oligomer	LD_{50} Oral (Rat)	None known
	LD_{50} Dermal (Rat)	> 2000 mg/kg
	LC_{50} Inhalation (Rat)	None known

Skin corrosion/irritation: Not expected to cause skin irritation.

Serious eye damage/eye irritation: Causes serious eye damage

Respiratory or skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: Not expected to cause genetic defects**.**

Carcinogenicity: Not expected to cause cancer

Reproductive toxicity: May damage fertility or the unborn child.

STOT – Single exposure: Not expected to cause specific target organ toxicity after a single exposure.

STOT – Repeat exposure: Not expected to cause specific target organ toxicity after prolonged or repeated exposure.

Aspiration hazard: This product is not anticipated to be an aspiration hazard if swallowed.

SECTION 12: Ecological information

Ecotoxicity (aquatic and terrestrial, where available):
Toxic to aquatic life with long lasting effects

Substance	**Test Type**	**Species**	**Value**
Acrylate monomer 1	LC_{50}	Fish Danio rerio	1.65 mg/L - 96h
	EC_{50}	Invertebrates Daphnia magna	2.36 mg/L - 48h

	EC_{50}	Algae Pseudokirchneriella subcapitata	26.2 µg/L - 72h
Acrylate monomer 2	LC_{50}	Fish Danio rerio	9.43 mg/L – 96h
	EC_{50}	Invertebrates Daphnia magna	158.3 mg/L – 48h
	EC_{50}	Algae Pseudokirchneriella subcapitata	25.7 mg/L – 72h
Additive	LC_{50}	Fish – Pimephales promelas	77 mg/L – 96 h
	EC_{50}	Invertebrates - Daphnia magna (Water flea)	665 mg/L – 48 h
	EC_{50}	Algae - Pseudokirchneriella subcapitata	520 mg/L – 72 h
Photoinitiator 1	LC_{50}	Fish – Danio rerio	1.89 mg/L – 96 h
	EC_{50}	Invertebrates - Daphnia magna (Water flea)	2.26 mg/L – 48 h
	EC_{50}	Algae - Desmodesmus subspicatus	1.01 mg/L – 72 h
Photoinitiator 2	LC_{50}	Fish – Freshwater fish	0.125 mg/L – 96 h
	EC_{50}	Invertebrates - Daphnia magna (Water flea)	0.125 mg/L – 48 h
	EC_{50}	Algae - Raphidocelis subcapitata	> 0.047 mg/L – 72 h
Photoinitiator 3	LC_{50}	Fish Oncorhynchus mykiss	4.5 mg/L – 96 h
	EC_{50}	Invertebrates - Daphnia magna (Water flea)	0.48 mg/L – 48 h
	EC_{50}	Algae - Raphidocelis subcapitata	2.8 mg/L – 72 h
Methacrylic oligomer	No information available		

Persistence and Degradability:
Not determined

Bioaccumulative Potential:
Not determined

Mobility in Soil:
Not determined.

Other adverse effects (such as hazardous to the ozone layer):
Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.

Product
Do not allow product to reach sewage system.
Dispose of waste materials in accordance with applicable local and national laws and regulations. Where possible, recycling is preferred to disposal or incineration. Contact the proper local authorities.

Contaminated packaging
Since emptied containers retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport Information

US Department of Transportation Classification (49CFR)
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S., 9, III

IMDG (Transport by sea)
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. 9, III

IATA (Country variations may apply)
UN 3082 Environmentally Hazardous Substances, Liquid, N.O.S., 9, III

Environmental hazards
Marine pollutant: Yes

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)
Not applicable

Special precautions which a user needs to be aware of, or needs to comply with, in connection with transport or conveyance either within or outside their premises.
None known

SECTION 15: Regulatory Information

USA:

United States Federal Regulations: This SDS complies with the OSHA, 29 CFR 1910.1200. The product is classified as hazardous under OSHA.

Toxic Substances Control Act (TSCA) – All of the ingredients are listed on the U.S. EPA TSCA Inventory List.

Emergency Planning and Community Right To-Know Act (EPCRA)
Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A): None listed

SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370 (amended 2018)):
Serious eye damage or eye irritation
Respiratory or skin sensitization
Reproductive toxicity

Section 313 Toxic Chemicals (40 CFR 372.65):
None of the components are listed

STATE REGULATIONS:

This SDS contains specific health and safety data is applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Proposition 65 (California Safe Drinking Water and Toxic Enforcement Act of 1986: None listed.

Massachusetts Right to Know: None of the components are listed on the Massachusetts Right to Know list.

New Jersey Right to Know None of the components are listed on the New Jersey Right to Know List.

Pennsylvania Right to Know: None of the components are listed on the Pennsylvania Right to Know List.

SECTION 16: Other Information

Revision Date: August 2, 2023

DISCLAIMER: This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 1910.1200. To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier nor any of its subsidiaries assumes any liability whatsoever for completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.