



# **IMMUNACOAT 4K**

## **SAFETY DATA SHEET PART B**

### **Safety Data Sheet**

Version 1.0. Date Issued: 01.06.15

According to Hazard Communication Standard {HCS} (29 CFR 1910.1200(9)) SOS  
reference number: TKA-100-US-114

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## **SECTION 1: IDENTIFICATION**

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**Product name:**

**Immunacoat 4K Aliphatic Polyurethane**

Manufacturer: Provecta Coatings  
1541 W Coles St,  
Long Beach, CA 90813

Customer Service (800) 242-7615  
EMERGENCY TELEPHONE NUMBER 800-424-9300 (CHEMTREC)  
POISON CENTER: (800) 562-8236

Synonyms: Hexamethylenediisocyanate oligomers, isocyanurate,  
Polyisocyanate

Relevant Identified Uses:

Hardener for coating materials or adhesives for industrial and  
trade applications.

Restrictions on use:  
Not suitable for use in home worker (DIY) applications

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## SECTION 2: HAZARD(S) IDENTIFICATION

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Classification of the substance or mixture  
According to OSHA 29 CFR 1910.1200 HCS

OSHA HCS 2012

Skin Irritant Category 2, H315  
Respiratory Sensitizer Category 1, H334

### Hazard pictogram(s)



According to Hazard Communication Standard (HCS) (29 CFR 1910.1200(9)) SOS reference number: TKA-100-US-114

SIGNAL WORD(S): Danger

HAZARD STATEMENT(S): H315: Causes skin irritation  
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

PRECAUTIONARY STATEMENT(S)

PREVENTION:

P261: Avoid breathing dust/fume/gas/mist/vapors/spray

P264: Wash hands thoroughly after handling

P280: Wear protective gloves/eye protection/face protection

P284: Wear respiratory protection

RESPONSE;

P302 + P352: If on skin: Wash with plenty of soap and water  
P304 + P340: If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing  
P332 + P313: If skin irritation occurs: Get medical advice/attention  
P342 + P311: If experiencing respiratory symptoms: Call a poison center or doctor/physician  
P362 + P364: Take off contaminated clothing and wash it before reuse.

STORAGE:  
Not applicable

DISPOSAL:  
P501: Dispose of contents/container in accordance with local/national/international regulations

Other hazards None specified

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### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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<b>Chemical name</b>	<b>% Weight<sup>3</sup></b>	<b>CAS No.</b>
Polyisocyanate	100	Listed
DHlb	0.2	22-06-0

• These values show typical ones only, and not to be used as a specification  
b HDI is hexamethylene diisocyanate

MIXTURES:  
Not applicable.

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## SECTION 4: FIRST-AID MEASURES

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### DESCRIPTION OF FIRST AID MEASURES

#### INHALATION:

Move the victim into the fresh air. If patient feels unwell, for difficulties in breathing or respiratory irritation, call for medical attention as soon as possible. If not breathing, give artificial respiration.

#### SKIN CONTACT:

Remove contaminated clothing and shoes.

Flush affected area with large amounts of water and soap.

Get medical advice/attention if patient feels unwell, or irritation Develops.

Wash clothing before reuse.

#### EYE CONTACT:

Immediately flush with plenty of running water for at least 15 minutes, occasionally holding eyelids apart.

If eye irritation persists: Get medical advice/attention.

#### INGESTION:

Give 2-4 cups of water or milk.

Get medical advice/attention immediately.

Never give anything by mouth to an unconscious person.

#### MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:

-Inhalation may cause lung irritation and other toxic symptoms. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED:

-Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Treat symptoms as they arise.

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## SECTION 5: FIRE-FIGHTING MEASURES

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### SUITABLE EXTINGUISHING MEDIA:

For small fires, use dry chemical, carbon dioxide, water spray.

For large fires, use water spray.

### UNSUITABLE EXTINGUISHING MEDIA:

NOTE: This product is insoluble in water. Water jets may spread Fire.

### SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

During a fire, irritating and highly toxic gasses such as carbon monoxide, oxides of nitrogen, isocyanate vapor and traces of hydrogen cyanide may be generated by thermal decomposition or **combustion**.

### ADVICE FOR FIRE-FIGHTERS:

Wear full protective clothing and self-contained breathing apparatus.

Use water spray to keep fire exposed containers cool.

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## SECTION 6: ACCIDENTAL RELEASE MEASURES

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### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

For large-scale spills, ensure full personal protection is worn.

Keep unauthorized personnel from the spillage area.

Note this product may produce a slip hazard.

Ventilate the area and remove sources of ignition.

Follow prescribed procedures for responding to large spills and reporting to authorities.

### ENVIRONMENTAL PRECAUTIONS:

Prevent this product from entering water courses or drainage

system. Do not flush to sewer.

#### METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:

Ventilate area of leak or spill.

Remove sources of ignition.

Contain and recover liquid when possible.

Use non-sparking tools and equipment.

Collect liquid in an appropriate container or absorb with an inert material.

Do not flush to sewer.

For small quantities, wipe off with cloth or paper, and wash affected area with water and detergent.

For large quantities, recover by taking up mechanically or with and inert absorbent material such as waste cloth, dry sand or Soil. Wash residue with water and detergent.

#### REFERENCE TO OTHER SECTIONS:

See Sections 8 and 13.

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## **SECTION 7: HANDLING AND STORAGE**

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#### PRECAUTIONS FOR SAFE HANDLING:

Workplaces should be well ventilated.

Avoid contact with skin and eyes. Avoid ingestion and inhalation.

The routine use of neutral or weak acid type of hand cleaner and regular cleaning of working surfaces, gloves etc. will help minimize the possibility of a skin reaction.

Avoid contact with heat, sparks and flame.

Use proper bonding and grounding procedures to reduce potential for static discharge.

Use spark-proof tools and explosion-proof equipment.

This product reacts slowly with water to form CO<sub>2</sub> gas. This gas can cause sealed containers to expand and possibly rupture explosively.

#### CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

Keep containers tightly closed.  
Store in a cool, dry, well-ventilated area.  
Keep away from sources of ignition.  
This product reacts with water to form CO<sub>2</sub> gas.

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## **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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### CONTROL PARAMETERS

OCCUPATIONAL EXPOSURE LIMITS:

OSHAPELs:  
None listed.

ACGIH-TLVs:

HDI: 8-hour TWA 0.005 ppm (0.034 mg/m<sup>3</sup>), HE9:  
asthmatic/respiratory sensitization-like responses, HE14: eye, nose,  
and throat irritation.

ACGHI BEi:

HDI: 1,6-hexamethylenediamine urinary (with hydrolysis)= 15 µg/g  
creatinine collected at the end of the work shift (proposed 2014).

NIOSH RELs:

HDI: 8-hour TWA: 0.005 ppm (0.035 mg/m<sup>3</sup>), Ceiling 0.020 ppm  
(0.140 mg/m<sup>3</sup>) [10-minute]

### EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be  
equipped with an eyewash facility and a safety shower.  
Use adequate general or local exhaust ventilation to keep airborne  
concentration below the permissible exposure limits.

### PERSONAL PROTECTION EQUIPMENT

**EYE/FACE PROTECTION:**

Avoid eye contact by wearing safety goggles. Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.

**HAND PROTECTION:**

Avoid skin contact by wearing chemical resistant gloves (Viton is recommended). Follow OSHA's hand protection regulations in 29 CFR 1910.138.

**RESPIRATORY PROTECTION:**

Wear respiratory protective equipment (organic vapor mask) if exposure to vapors is foreseen. Follow the OSHA respirator regulations found in 29 CFR 1910.134.

Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

**SKIN AND BODY PROTECTION:**

Where more extensive contact may occur, wear suitable protective clothing (e.g. apron, sleeves and boots).

**HYGIENE MEASURES:**

Consult PPE manufacturers concerning breakthrough times.

**ENVIRONMENTAL EXPOSURE CONTROLS:**

None specified.

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## **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

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**ODOR THRESHOLD (PPM):**

No data available

**PH (VALUE):**

No data available

**MELTING POINT / FREEZING POINT:**



No data available

INITIAL BOILING POINT AND BOILING RANGE:

No data available

FLASH POINT (0C):

252°C (Cleveland open-cup)

EVAPORATION RATE:

Estimated to be very low

FLAMMABILITY (SOLID, GAS):

Not applicable.

UPPER/LOWER FLAMMABILITY OR EXPLOSIVE LIMITS:

No data available

VAPOR PRESSURE:

Estimated to be very low

VAPOR DENSITY (AIR-1):

No data available

RELATIVE DENSITY (H<sub>2</sub>O=1):

1.17 (20°C)

SOLUBILITY(IES):

Insoluble in water

PARTITION COEFFICIENT (N-OCTANOVWATER):

No data available

AUTO IGNITION TEMPERATURE:

485 °C(ASTM method.)

DECOMPOSITION TEMPERATURE:

No data available

VISCOSITY:

3000 mPa·s/25°C (Representative value)

EXPLOSIVE PROPERTIES:

No data available.

OXIDIZING PROPERTIES:

No data available

No other information.

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## **SECTION 10: STABILITY AND REACTIVITY**

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REACTIVITY:

No data available.

CHEMICAL STABILITY:

Stable at room temperature in closed containers under normal storage and handling conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:

No hazardous decomposition products when stored and handled correctly.

Hazardous polymerization does not occur.

CONDITIONS TO AVOID:

Sunlight and temperatures exceeding 40°C.

Moisture.

INCOMPATIBLE MATERIAL:

Exothermic reaction with amines and alcohols.

Reacts slowly with water forming CO<sub>2</sub> with risk of bursting

HAZARDOUS DECOMPOSITION PRODUCT(S) :

May form carbon monoxide, oxides of nitrogen, isocyanates, and traces of hydrogen cyanide if heated to decomposition.

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## SECTION 11: TOXICOLOGICAL INFORMATION

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INFORMATION ON TOXICOLOGICAL EFFECTS

HDI IS USED AS AN ACRONYM FOR HEXAMETHYLENE DIISOCYANATE.

ACUTE TOXICITY

PRODUCT (INCLUDING REMAINING HDI):

OSHA HCS 2012 classification criteria not met.

LOSO >2500 mg/kg (oral, rat), based on available data, the classification criteria are not met.

HDI COMPONENT:

LOSO >2000 mg/kg (dermal, rat), based on available data, the Classification criteria are not met.

Inhalation, vapor: no product data, classification not possible.

LOSO= 747 mg/kg (oral, rat), classified as Category 4.

LC50 = 20 ppm (4h inhalation, rat), classified as Category 1.

LOSO= 593 mg/kg (dermal, rabbit), classified as Category 3.

SKIN CORROSION/IRRITATION

PRODUCT (INCLUDING REMAINING HDI):

HOI COMPONENT:

Product classified as Skin Irritant Category 2.

Classified as Category 2.

Classified as Category 1 A-1 C.

SERIOUS EYE DAMAGE/IRRITATION

PRODUCT (INCLUDING REMAINING HOI):

HDI COMPONENT:

OSHA HCS 2012 classification criteria not met.

Based on available data, the classification criteria are not met.

Classified as Category 1.

RESPIRATORY OR SKIN SENSITIZATION

PRODUCT (INCLUDING REMAINING HDI):

HDI COMPONENT:

Product is classified as Respiratory Sensitizer Category 1.

Skin sensitization: Based on available data for the product, the classification criteria are not met.

Classified as Respiratory Sensitizer Category 1 and as Skin Sensitizer Category 1.

GERM CELL MUTAGENICITY

PRODUCT (INCLUDING REMAINING HDI):

HDI COMPONENT:

OSHA HCS 2012 classification criteria not met.

No product data, classification not possible. Based on available data, the classification criteria are not met.

CARCINOGENICITY

PRODUCT (INCLUDING REMAINING HDI):

OSHA HCS 2012 classification criteria not met.

No product data, classification not possible.

NTP:

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 NTP.

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OSHA:

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 OSHA.

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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.

REPRODUCTIVE TOXICITY

PRODUCT (INCLUDING REMAINING HDI):

HDI COMPONENT:

OSHA HCS 2012 classification criteria not met.

No product data, classification not possible.

STOT - SINGLE EXPOSURE

PRODUCT (INCLUDING REMAINING HDI):

HDI COMPONENT:

No product data, classification not possible.

Classified as Category 1 (respiratory system).

OSHA HCS 2012 classification criteria not met.

STOT - REPEATED EXPOSURE

PRODUCT (INCLUDING REMAINING HOT):

HOT COMPONENT:

OSHA HCS 2012 classification criteria not met.

No product data, classification not possible.

Classified as Category 1 (respiratory system).

ASPIRATION HAZARD

PRODUCT (INCLUDING REMAINING HDI):

OSHA HCS 2012 classification criteria not met.

Not classified due to lack of data.

TARGET ORGANS:

No data available.

ROUTE(S) OF ENTRY/EXPOSURE:

Inhalation, Skin, Eye, Ingestion

POTENTIAL HEALTH EFFECTS

INHALATION:

ACUTE (IMMEDIATE):

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

CHRONIC (DELAYED):

May cause allergy or asthma symptoms or breathing difficulties if

inhaled.

SKIN:

ACUTE (IMMEDIATE):

Causes skin irritation.

CHRONIC (DELAYED):.

Causes skin irritation.

EYE:

ACUTE (IMMEDIATE):

No data available.

CHRONIC (DELAYED):

No data available.

INGESTION:

ACUTE (IMMEDIATE):

No data available.

CHRONIC (DELAYED):

No data available.

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## **SECTION 12: ECOLOGICAL INFORMATION**

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ACUTE AQUATIC TOXICITY

PRODUCT:

Polyisocyanate component (including remaining Hot):

HDI COMPONENT:

CHRONIC AQUATIC TOXICITY

PRODUCT:

HDI COMPONENT:

PERSISTENCE AND DEGRADABILITY:

Polyisocyanate component (including

remaining HOI):

Based on available data, the classification criteria are not met. Not classified.

Killifish, LC50 > 100 mg/L (96h).

Daphnia magna, EC50 > 100 mg/L (48h).

Algae, ErC50 > 100

mg/L (72h, velocity

method). Not

classified.

Oaphnia magna, EC50 ::: 89.1 mg/L (48h)

No product data,

classification not

possible. Not

classified.

No data.

Not insoluble in water.

BIOACCUMULATIVE POTENTIAL

POLYISOCYANATE COMPONENT (INCLUDING

REMAINING HDI):

HDI COMPONENT:

No data.

No data.

MOBILITY IN SOIL:

No data available for the product.

RESULTS OF PST AND VPVB ASSESSMENT:

No data available for the product.

OTHER ADVERSE EFFECTS:

Hazards to the Ozone layer: No data. The product does not contain any substances listed in the Montreal protocol.

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## SECTION 13: DISPOSAL CONSIDERATIONS

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## WASTE TREATMENT METHODS

### RESIDUAL WASTES:

Incineration and landfill are recommended for this product and any recovered material. This product should be disposed of according to local/state/federal regulations.

### CONTAMINATED CONTAINERS AND PACKAGING:

Empty containers retain this product and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or exposure such containers to heat, flame, sparks, static, electricity or other sources of ignition.

The containers should be disposed of according to local/state/federal regulations.

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## SECTION 14: TRANSPORT INFORMATION

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### UN NUMBER:

Not classified for transport according to UN criteria

### UN PROPER SHIPPING NAME:

Not applicable

### TRANSPORT HAZARD CLASS(ES):

Not applicable

### PACKING GROUP:

Not applicable

### ENVIRONMENTAL HAZARDS:

Not applicable

### SPECIAL PRECAUTIONS FOR USER:

Not applicable

### TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL73N8 AND THE IBC CODE:



Not applicable

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## SECTION 15: REGULATORY INFORMATION

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### TSCA LIST

AU components are listed on the TSCA Inventory or are exempt from listing.

### OSHA HAZARDS:

This product is not hazardous under 29CFR1910.120

### CERCLA REPORTABLE QUANTITY:

Hexamethylene-1,6-diisocyanate RQ: 100 lbs

### SARA 304 EXTREMELY HAZARDOUS SUBSTANCES REPORTABLE QUANTITY:

This material does not contain any components with a section 304 EHS RQ.

### SARA302:

No chemicals in this material are subject to the reporting requirements of SARA Title I, Section 302.

### SARA 311 / 312:

Acute Health Hazard: Yes

### SARA 313:

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### CLEAN AIR ACT

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release

Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111

SOCMI Intermediate or Final

VOC's (40 CFR 60.489).

### CLEAN WATER ACT

This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

#### MASSACHUSETTS RIGHT TO KNOW

Hexamethylene-1,6-diisocyanate is listed.

Pennsylvania Right To Know

Hexamethylene-1,6-diisocyanate is listed.

New Jersey Right To Know

Hexamethylene-1,6-diisocyanate is listed.

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

#### PENNSYLVANIA RIGHT TO KNOW:

Hexamethylene-1,6-diisocyanate is listed.

#### NEW JERSEY RIGHT TO KNOW:

Hexamethylene-1,6-diisocyanate is listed.

#### CALIFORNIA PROP 65:

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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## **SECTION 16: OTHER INFORMATION**

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Disclaimer: The information herein is believed to be accurate and reliable as of the date compiled. However, Provecta coatings makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information