SAFETY DATA SHEET: #1 Black Pitch

SECTION 1: CHEMICAL PRODUCT & COMPANY INFORMATION

APPLICABLE PART #: PA0001, PB0100
IDENTITY: #1 Black Pitch

SUPPLIER: Universal Photonics, Inc.
85 Jetson Lane
Central Islip, NY 11722

FOR INFORMATION CALL CUSTOMER SERVICE
(516) 935-4000

DATE PREPARED: February 10, 2016

EMERGENCY TELEPHONE NUMBER:
1.866.519.4752 3-E COMPANY - ACCT # 3665

SECTION 2: HAZARDS IDENTIFICATION

PHYSICAL HAZARDS: Not classified.

HEALTH HAZARDS: Not classified.

OSHA DEFINED HAZARDS: Not classified.

LABEL ELEMENTS:

HAZARD SYMBOL: None.

SIGNAL WORD: None.

HAZARD STATEMENT: The mixture does not meet the criteria for classification.

PRECAUTIONARY STATEMENT:

PREVENTION: Observe good industrial hygiene practices.

RESPONSE: Wash hands after handling.

STORAGE: Store away from incompatible materials.

DISPOSAL: Dispose of waste and residues in accordance with local authority requirements.

HAZARD(S) NOT OTHERWISE CLASSIFIED (HNOC): None known.

SECTION 3: COMPOSITION INFORMATION

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>CAS #</th>
<th>WEIGHT %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade Secret*</td>
<td>Proprietary</td>
<td>Proprietary</td>
</tr>
</tbody>
</table>

NOTE: *This product is non-hazardous. Identities of these materials are withheld as a trade secret (29 CPR 1910.1200(i)
SECTION 4: FIRST AID MEASURES

INHALATION: In case of inhalation of fumes from heated product: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a physician if symptoms develop or persist.

SKIN CONTACT: Wash off with soap and water. Cool skin rapidly with cold water after contact with molten material. Get medical attention if irritation develops and persists.

EYE CONTACT: Rinse with water. If molten material contacts the eye, immediately flush with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

INGESTION: Rinse mouth. Get medical attention if symptoms occur.

MOST IMPORTANT Direct contact with eyes may cause temporary irritation. Molten material will produce thermal burns.

SYMPTOMS/EFFECTS, ACUTE AND DELAYED:

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Treat symptomatically.

GENERAL INFORMATION: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

SECTION 5: FIRE FIGHTING MEASURES


UNSUITABLE EXTINGUISHING MEDIA: Do not use water jet as an extinguisher, as this will spread the fire.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL: During fire, gases hazardous to health may be formed.

SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

FIRE FIGHTING EQUIPMENT/INSTRUCTIONS: Use water spray to cool unopened containers.

SPECIFIC METHODS: Use standard firefighting procedures and consider the hazards of other involved materials.

GENERAL FIRE HAZARDS: This product is not flammable. Will burn if involved in a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS,
SAFETY DATA SHEET: #1 BLACK PITCH

PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:
In case of spills, beware of slippery floors and surfaces. Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:
Collect spillage. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

ENVIRONMENTAL PRECAUTIONS:
Avoid discharge into drains, water courses or onto the ground.

SECTION 7: HANDLING & STORAGE

PRECAUTIONS FOR SAFE HANDLING:
Avoid prolonged exposure. Observe good industrial hygiene practices.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:
Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: PERSONAL PROTECTION AND EXPOSURE CONTROLS

OCCUPATIONAL EXPOSURE LIMITS:

US. NIOSH: POCKET GUIDE TO CHEMICAL HAZARDS:

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosin (CAS# 8050-09-7)</td>
<td>TWA</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

BIOLOGICAL LIMIT VALUES:
No biological exposure limits noted for the ingredient(s).

APPROPRIATE ENGINEERING CONTROLS:
General ventilation normally adequate.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION:
Wear a face shield when working with molten material.

SKIN PROTECTION:

HAND PROTECTION:
For prolonged or repeated skin contact use suitable protective gloves. When handling hot material, use heat resistant gloves.

OTHER:
Wear suitable protective clothing.

RESPIRATORY PROTECTION:
No personal respiratory protective equipment normally required. Heated material: In case of inadequate ventilation or risk of inhalation of fumes, use suitable respiratory equipment.

THERMAL HAZARDS:
Wear appropriate thermal protective clothing, when necessary.
SAFETY DATA SHEET: #1 BLACK PITCH

GENERAL HYGIENE CONSIDERATIONS:
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:
Black solid

ODOR:
Slight paraffinic or waxy odor

MELTING POINT:
40-65°C

SPECIFIC GRAVITY (H₂O = 1):
Various according to blend ratios

EVAPORATION RATE:
Negligible @ 20 °C

SOLUBILITY IN WATER:
Insoluble

PERCENT VOLATILE:
Negligible

VISCOSITY:
Various according to blend ratios

SECTION 10: STABILITY & REACTIVITY

REACTIVITY:
The product is stable and non-reactive under normal conditions of use, storage and transport.

CHEMICAL STABILITY:
Material is stable under normal conditions.

POSSIBILITY OF HAZARDOUS REACTIONS:
No dangerous reaction known under conditions of normal use.

CONDITIONS TO AVOID:
Contact with incompatible materials.

INCOMPATIBLE MATERIALS:
Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS:
No hazardous decomposition products are known.

SECTION 11: TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE:
SAFETY DATA SHEET: #1 BLACK PITCH

INHALATION:
When heated, the vapors/fumes given off may cause respiratory tract irritation.

SKIN CONTACT:
Prolonged skin contact may cause temporary irritation. Molten material will produce thermal burns.

EYE CONTACT:
Direct contact with eyes may cause temporary irritation. Molten material will produce thermal burns.

INGESTION:
May cause discomfort if swallowed.

SYMPTOMS RELATED TO THE PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:
Direct contact with eyes may cause temporary irritation. Contact with molten material may cause thermal burns.

INFORMATION ON TOXICOLOGICAL EFFECTS:

SKIN CORROSION/IRRITATION:
Prolonged skin contact may cause temporary irritation. Molten material will produce thermal burns.

SERIOUS EYE DAMAGE/EYE IRRITATION:
Direct contact with eyes may cause temporary irritation. Molten material will produce thermal burns.

RESPIRATORY OR SKIN SENSITIZATION:

ACGIH SENSITIZATION:
Rosin (CAS 8050-09-7): Dermal Sensitization, Respiratory Sensitization

RESPIRATORY SENSITIZATION:
Not a respiratory sensitizer.

SKIN SENSITIZATION:
This product is not expected to cause skin sensitization.

GERM CELL MUTAGENICITY:
No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

CARCINOGENICITY:
This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

Not listed.

REPRODUCTIVE TOXICITY:
This product is not expected to cause reproductive or developmental effects.

SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE:
Not classified.

SPECIFIC TARGET ORGAN TOXICITY – REPEATED EXPOSURE:
Not classified.

ASPIRATION HAZARD:
Not an aspiration hazard.

CHRONIC EFFECTS:
No data available.
SAFETY DATA SHEET: #1 BLACK PITCH

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

PERSISTENCE AND DEGRADABILITY: No data is available on the degradability of this product.

BIOACCUMULATIVE POTENTIAL: No data available.

MOBILITY IN SOIL: No data available.

OTHER ADVERSE EFFECTS: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation)

SECTION 13: DISPOSAL INFORMATION

DISPOSAL INSTRUCTIONS: Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

LOCAL DISPOSAL REGULATIONS: Dispose in accordance with all applicable regulations.

HAZARDOUS WASTE CODE: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

WASTE FROM RESIDUES / UNUSED PRODUCTS: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

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

SECTION 14: TRANSPORTATION INFORMATION

DOT: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE: Not applicable.

SECTION 15: REGULATORY INFORMATION

US FEDERAL REGULATIONS: This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) EXPORT
SAFETY DATA SHEET: #1 BLACK PITCH


CERCLA HAZARDOUS SUBSTANCE LIST (40 CFR 302.4): Not listed.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 (SARA):

HAZARD CATEGORIES: Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard – No

SARA 302 EXTREMELY HAZARDOUS SUBSTANCE: Not listed.

SARA 311/312 HAZARDOUS CHEMICAL: No

SARA 313 (TRI REPORTING): Not regulated.

OTHER FEDERAL REGULATIONS:

CLEAN AIR ACT (CAA) SECTION 112 HAZARDOUS AIR POLLUTANTS (HAPs) LIST: Not regulated.

CLEAN AIR ACT (CAA) SECTION 112(R) ACCIDENTAL RELEASE PREVENTION (40 CFR 68.130): Not regulated.

SAFE DRINKING WATER ACT (SDWA): Not regulated.

US STATE REGULATIONS:

US. MASSACHUSETTS RTK – SUBSTANCE LIST: Not regulated.

US. NEW JERSEY WORKER AND COMMUNITY RIGHT-TO-KNOW ACT: Not listed.

US. PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW LAW: TRADE SECRET (CAS Proprietary)

US. RHODE ISLAND RTK: Not regulated.
SAFETY DATA SHEET: #1 BLACK PITCH

US. CALIFORNIA PROPOSITION 65:
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

<table>
<thead>
<tr>
<th>COUNTY(S) OR REGION</th>
<th>INVENTORY NAME</th>
<th>ON INVENTORY (YES/NO)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

SECTION 16: OTHER INFORMATION

HMIS RATING: Health 0, Flammability 1, Physical Hazard 0, Personal Protection B

NFPA RATING: Health 0, Flammability 1, Reactivity 0

ABBREVIATIONS
N/A – Not available
DOT – Department of Transportation
GHS – The Globally Harmonized System of Classification and Labeling of Chemicals
HMIS – Hazardous Materials Identification System
NIOSH – National Institute for Occupational Safety and Health
NORM – Natural Occurring Radioactive Materials
IATA – International Air Transportation Association
IMO – International Maritime Organization
OSHA – Occupational Safety & Health Administration
TSCA – Toxic Substance Control Act
DISCLAIMER

WHILE UNIVERSAL PHOTONICS, INC. BELIEVES THAT THE DATA AND INFORMATION CONTAINED HEREIN ARE FACTUAL AND THE OPINIONS ARE THOSE OF QUALIFIED EXPERTS, THEY ARE NOT TO BE TAKEN AS A WARRANTY OR REPRESENTATION FOR WHICH UNIVERSAL PHOTONICS, INC. ASSUMES ANY LEGAL RESPONSIBILITY. THEY ARE OFFERED SOLEY FOR THE CONSIDERATION, INVESTIGATION AND VERIFICATION BY THE USER. IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SUITABILITY OF THIS PRODUCT, DATA AND INFORMATION WITH APPLICABLE LAWS AND REGULATIONS.