SECTION 1: IDENTIFICATION

Product identifier	**Opti-Bond Bonding Agent**
Product code	Opti-Bond (based on Bonding Agent 51066; material 56377364)
Other means of identification	Polyisocyanate bonding / adhesion-promoter additive (alkylsulfonic acid ester of phenol + polymeric toluene diisocyanate)
Recommended use	Bonding / adhesion-promoting additive for screen printing inks. For industrial use only.
Restrictions on use	Industrial and professional use only. Not for any food-contact, medical, pharmaceutical, cosmetic or other regulated end use unless approved in writing by Champion Inks. **Contains isocyanates - see Sections 8 and 11 (respiratory sensitizer) and Section 15 (Prop 65).**
Manufacturer / supplier	Champion Inks 200 S. Newman Street, Unit 4 & 5, Hackensack, NJ 07601, USA
Telephone / web	+1 (302) 667-6096 - www.championinks.com - web@championinks.com
Emergency telephone (24-hr)	**CHEMTREC** - USA / Canada: +1-800-424-9300 - International: +1-703-527-3887 CHEMTREC Contract / CCN863598

SECTION 2: HAZARD(S) IDENTIFICATION

GHS classification of the mixture (OSHA HCS-2024, 29 CFR 1910.1200; GHS Rev. 7):

Hazard class	Cat.	Hazard statement
Serious eye damage / eye irritation	2A	H319 - Causes serious eye irritation.
Respiratory sensitization	1	H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin sensitization	1	H317 - May cause an allergic skin reaction.
Carcinogenicity	2	H351 - Suspected of causing cancer.

Signal word	**DANGER**
Pictograms	GHS08 (Health hazard) and GHS07 (Exclamation mark).
Hazard statements	H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H351 Suspected of causing cancer.
Precautionary - Prevention	P201 Obtain special instructions before use. P210 Keep away from heat, hot surfaces, sparks and open flames - No smoking. P233 Keep container tightly closed. P260 Do not breathe vapor or mist. P264 Wash thoroughly after handling. P270 Do not eat, drink or smoke when using. P271 Use only outdoors or in a well-ventilated area. P273 Avoid release to the environment. P280 Wear protective gloves, protective clothing and eye/face protection.
Precautionary - Response	P301+P310 IF SWALLOWED: Immediately call a POISON CENTER / doctor. P331 Do NOT induce vomiting (aspiration hazard). P304+P340 IF INHALED: Remove person to fresh air. P308+P313 IF exposed or concerned: Get medical advice/attention. P391 Collect spillage.
Precautionary - Storage / Disposal	P403+P233 Store in a well-ventilated place; keep container tightly closed. P405 Store locked up. P501 Dispose of contents and container in accordance with applicable local, state and federal regulations.
Unknown acute toxicity	0% of the mixture is of unknown acute toxicity.



GHS08
Health hazard



GHS07
Irritant / harmful

ISOCYANATE - RESPIRATORY SENSITIZER. Contains toluene diisocyanate (TDI). May cause asthma / allergic respiratory and skin reactions, and is suspected of causing cancer. Warning odor/irritation are NOT adequate to prevent overexposure. Use only with proper ventilation and respiratory/skin protection; institute medical surveillance. Workers previously sensitized to isocyanates must not be exposed. Provide the required California Prop 65 (TDI) warning. See Sections 8, 11 and 15.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Wt %	GHS classification of component
Toluene diisocyanate homopolymer (polymeric TDI)	9017-01-0	20 - 25	Resp. Sens. 1 (H334); Skin Sens. 1 (H317); Eye Irrit. 2A (H319); Carc. 2 (H351)
Toluene diisocyanate, mixed isomers (TDI)	26471-62-5	< 1	Acute Tox. 1 (inhalation); Resp./Skin Sens. 1; Carc. 2 (IARC 2B); Prop 65
Alkylsulfonic acid ester of phenol (carrier / plasticizer base)	Proprietary	Balance	Not classified

Polyisocyanate adhesion additive (based on LANXESS Bonding Agent 51066). Free toluene diisocyanate (TDI) monomer is present at <1%. Exact percentages may be withheld as trade secrets and disclosed per 29 CFR 1910.1200(i).

SECTION 4: FIRST-AID MEASURES

General advice	Take a copy of the label and this SDS to the physician. First-aiders should protect themselves.
Inhalation	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration or oxygen by trained personnel. Get medical attention if breathing difficulty develops.
Skin contact	Immediately wash with soap and plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists. Wash or discard clothing/shoes before reuse. Do NOT use solvent/thinner to remove product from skin.
Eye contact	Flush with water; remove contact lenses and continue flushing for at least 15 minutes. If irritation persists, have eyes examined by medical personnel.
Ingestion	Do NOT induce vomiting (aspiration hazard - may be fatal if it enters the lungs). Call a physician or Poison Control Center immediately. Never give anything by mouth to an unconscious person.
Most important symptoms / effects	Eye/skin/respiratory irritation; headache, dizziness, weakness, fatigue and other narcotic/CNS effects; isocyanate exposure may cause asthma / allergic respiratory and skin reactions (effects can be delayed) and is suspected of causing cancer.
Notes to physician	Treat symptomatically. Aspiration risk - do not induce emesis; if gastric evacuation is needed, protect the airway.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media	Foam, carbon dioxide (CO2), dry chemical or water spray (fog).
Unsuitable extinguishing media	Water may be ineffective as an extinguisher but may be used to cool containers; do not use a heavy water jet.
Specific hazards	Not flammable under normal conditions. Containers may build pressure (isocyanate reacts with water/moisture). During a fire, decomposition releases isocyanate vapors, hydrogen cyanide, nitrogen oxides and carbon oxides. Fumes released on burning are toxic.
Hazardous combustion products	Carbon monoxide, carbon dioxide and other noxious gases.
Protection for firefighters	Full protective equipment including self-contained breathing apparatus (SCBA). Cool exposed containers with water.
Flash point	High (> 200 deg C); not classified as flammable. Combustion releases isocyanate vapors, hydrogen cyanide, nitrogen oxides and carbon oxides - highly toxic.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions	Remove all ignition sources (flames, hot surfaces, electrical/static/frictional sparks). Avoid contact and avoid breathing vapors. Ventilate the area. Wear appropriate PPE (Section 8).
Environmental precautions	Prevent entry into drains, sewers, soil and waterways. Report reportable spills to the National Response Center (+1-800-424-8802) and local authorities.
Containment and cleanup	Contain the release and absorb with inert absorbent. Use non-sparking tools to place material in an appropriate labeled container for disposal.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling	Use in a well-ventilated area away from ignition sources. Bond and ground containers when transferring. Avoid breathing vapor/mist and skin/eye contact. Do not eat, drink or smoke. Follow label precautions even after the container is emptied.
Conditions for safe storage	Store in closed containers in a cool, dry, well-ventilated area away from ignition sources, heat and incompatible materials. Keep containers closed when not in use. Keep out of reach of children.
Incompatible materials	Strong acids and bases, oxidizing and reducing agents, and reactive chemicals.
Empty containers	May retain hazardous residue and vapor; do not cut, weld or expose to heat/sparks. Dispose of properly.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Component (CAS)	OSHA PEL	ACGIH TLV	Notes
Toluene diisocyanate / TDI (26471-62-5)	0.02 ppm ceiling	0.005 ppm TWA; 0.02 ppm STEL	Resp. sensitizer
Polymeric TDI (9017-01-0)	Control as -NCO	0.005 ppm (as -NCO)	Resp. sensitizer

ISOCYANATE EXPOSURE CONTROLS: airborne diisocyanate can exceed the ACGIH TLV quickly at room temperature - use local exhaust and keep levels below the TLV/PEL. Odor and irritation are NOT reliable warnings. Use a supplied-air respirator for spraying or where levels may exceed the limit. Conduct pre-placement and annual medical surveillance; exclude workers with asthma or prior isocyanate sensitization. Once sensitized, a worker must have no further isocyanate exposure.

Engineering controls	Provide local exhaust and general ventilation to keep airborne levels below applicable limits. Provide eyewash stations and, where splashing is possible, a safety shower.
Eye / face protection	ANSI Z87.1 safety glasses, splash goggles or face shield where splashing is possible.
Hand / skin protection	Chemical-resistant gloves (nitrile / butyl) and protective clothing; cover exposed skin. Contaminated clothing must not leave the workplace.
Respiratory protection	Supplied-air respirator (SAR/SCBA) for spraying or where airborne diisocyanate may exceed the TLV/PEL. An organic-vapor (OV) cartridge APR may be used only when concentration is no greater than 10x the TLV/PEL, per 29 CFR 1910.134.
General hygiene	Wash with soap and water before eating, drinking, smoking or using the restroom. Launder or discard contaminated clothing/footwear. Never remove ink from skin with solvent.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid	**Upper explosive limit**	Not available
Color	Amber / brown	**Vapor pressure**	0.59 mmHg @ 20 C
Odor	Faint / characteristic	**Vapor density**	4.7 (air = 1)
Odor threshold	Not available	**Relative density**	Approx. 1.1 - 1.2 (verify)
pH	Not available	**Solubility in water**	Reacts slowly with water (releases CO2)
Melting / freezing point	Not available	**Partition coefficient (log Kow)**	Not available
Boiling point / range	Not available (polymeric)	**Auto-ignition temperature**	Not available

Flash point	> 200 deg C (not flammable)	**Decomposition temperature**	Not available
Evaporation rate	Slower than ethyl ether	**Viscosity**	Viscous liquid (verify)
Flammability classification	Not classified as flammable	**VOC content**	Low (verify)
Lower explosive limit	Not available	**Reactivity**	Reacts with water, amines and alcohols

SECTION 10: STABILITY AND REACTIVITY

Reactivity	Not reactive under normal conditions.
Chemical stability	Stable under recommended storage and handling conditions.
Possibility of hazardous reactions	Hazardous polymerization is not anticipated. Vapors may form explosive mixtures with air.
Conditions to avoid	Excessive heat, ignition sources, sparks and open flame.
Incompatible materials	Strong acids and bases, oxidizing and reducing agents, reactive chemicals.
Hazardous decomposition products	Carbon monoxide, carbon dioxide and other noxious gases on heating to decomposition.

SECTION 11: TOXICOLOGICAL INFORMATION

Likely routes of exposure	Inhalation; skin contact/absorption; eye contact; ingestion.
Acute effects	Eye irritation (burning, tearing, swelling, redness); skin irritation/dermatitis; respiratory-tract irritation; headache, dizziness, weakness and fatigue. Harmful or fatal if swallowed (aspiration).
Skin	May cause an allergic skin reaction (sensitization). Avoid all skin contact.
Carcinogenicity	Toluene diisocyanate (TDI) is IARC Group 2B - suspected of causing cancer (H351). TDI is California Prop 65-listed (Section 15).
Target organs / other	High vapor/aerosol concentrations may cause CNS effects (headache, dizziness, anesthesia, drowsiness). Effects from isocyanate exposure (respiratory sensitization/asthma) may be delayed.
Chronic effects	Repeated, prolonged solvent overexposure has been associated with permanent brain and nervous-system damage.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity	Classified for transport as environmentally hazardous (the polymeric isocyanate is aquatic-hazardous). Reacts slowly with water forming inert solids and CO2. Do not allow to enter drains, soil or watercourses.
Persistence and degradability	No data for the mixture.
Bioaccumulative potential	Aromatic components may bioaccumulate.
Mobility	Low volatility; reacts with water.
Other adverse effects	None known beyond those listed.

Note: OSHA does not enforce the content of Sections 12-15, but they are required to maintain the GHS 16-section order.

SECTION 13: DISPOSAL CONSIDERATIONS

Disposal methods	Dispose of per applicable local, state and federal regulations via a licensed waste contractor. Spent solvent is likely a characteristic hazardous waste (ignitability D001; possibly toxicity) - make a waste determination under 40 CFR 261.
Contaminated packaging	Empty containers retain residue and vapor; dispose of properly. Do not reuse.

SECTION 14: TRANSPORT INFORMATION

US DOT (land)	UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (toluene diisocyanate), Class 9, PG III. Marine Pollutant. (Small-quantity / non-bulk exceptions may apply - confirm per package size.)
IMDG (sea) / IATA (air)	Per the supplier, not regulated as a dangerous good (confirm for the finished product / package size).
Special precautions	Mark as a Marine Pollutant where applicable. Keep containers dry and tightly closed - the product reacts with water and can build pressure.

SECTION 15: REGULATORY INFORMATION

US TSCA inventory	All components are listed on the TSCA Inventory.
RCRA	Toluene diisocyanate is a U223 listed hazardous waste; unused product discarded in its purchased form is a listed RCRA hazardous waste.
SARA 311/312 hazard classes	Yes - Respiratory/skin sensitization; carcinogenicity; serious eye irritation (acute and chronic health hazards).
SARA 313 (TRI)	Diisocyanates (toluene diisocyanate, CAS 26471-62-5) are a SARA 313-listed category - report if thresholds are met.
California Proposition 65	**WARNING:** This product contains toluene diisocyanate (TDI; e.g., CAS 584-84-9 / 26471-62-5), a chemical known to the State of California to cause cancer. Provide the required Prop 65 warning. www.P65Warnings.ca.gov.
State Right-to-Know	Toluene diisocyanate appears on state Right-to-Know lists (NJ, PA, MA, etc.).

Product stewardship & certifications

Phthalate-free	Yes. Champion Inks inks are formulated without ortho-phthalate plasticizers; plastisol inks use phthalate-free plasticizers such as DOTP (dioctyl terephthalate, CAS 6422-86-2) or adipate esters (e.g., dioctyl adipate). No ortho-phthalates restricted under CPSIA, REACH Annex XVII or California Proposition 65 are intentionally added.
California Proposition 65 compliance	Champion Inks manages its products for California Proposition 65 compliance. Where a product contains a listed substance above the applicable safe-harbor level, the required warning is provided in this Section 15; where none is present above safe-harbor levels, no warning is required.

SECTION 16: OTHER INFORMATION

Hazard statements (full text)	H317 May cause an allergic skin reaction. H319 Causes serious eye irritation. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H351 Suspected of causing cancer.
Hazard ratings	Assign per facility hazard assessment (isocyanate respiratory sensitizer / suspected carcinogen).
Prepared by	Champion Inks - Regulatory / EHS
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Disclaimer: The information herein is believed to be accurate and is provided in good faith but without warranty of any kind. It relates only to the specific product designated and may not be valid for such product used in combination with any other materials or in any process. The user is responsible for determining suitability and for compliance with all applicable regulations.

End of Safety Data Sheet