



SAFETY DATA SHEET

According to 29 CFR 1910.1200 (OSHA HCS) & GHS

Product: Flak Jacket 1

Date: July 9, 2026 (v1.0)

SECTION 1: IDENTIFICATION

Product Identifier: Flak Jacket 1
Product Code: FJ-1 (Flak Jacket 1)
Product Use: Protective polyurethane coating (industrial use). Not for consumer use.
Manufacturer: Oak Ridge Foam & Coating Systems, Inc. | Green Lake, WI, USA
Emergency Phone: CHEMTREC: 800-424-9300 (24 Hours)

SECTION 2: HAZARD(S) IDENTIFICATION

Flammable Liquids: Cat 3

Skin Irritation: Cat 2

Eye Irritation: Cat 2A

Carcinogenicity: Cat 2 (Carbon Black inhalation)

Resp. Sensitization: Cat 1

Skin Sensitization: Cat 1

STOT-SE (Resp & CNS): Cat 3



WARNING

Hazard Statements

- **H226:** Flammable liquid and vapor.
- **H315:** Causes skin irritation.
- **H317:** May cause an allergic skin reaction.
- **H319:** Causes serious eye irritation.
- **H334:** May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- **H335:** May cause respiratory irritation.
- **H336:** May cause drowsiness or dizziness.
- **H351:** Suspected of causing cancer (inhalation of carbon black dust).

Precautionary Statements

- **P210:** Keep away from heat, sparks, open flames, hot surfaces. No smoking.
- **P261:** Avoid breathing dust/fume/gas/mist/vapors/spray.
- **P280:** Wear protective gloves/eye protection/face protection.
- **P284:** [In case of inadequate ventilation] wear respiratory protection.
- **P303+P361+P353:** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
- **P304+P340:** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P305+P351+P338:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- **P342+P311:** If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
- **P370+P378:** In case of fire: Use dry chemical, foam, or CO₂ to extinguish.
- **P403+P235:** Store in a well-ventilated place. Keep cool.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Concentration (%)
4,4'-Diphenylmethane Diisocyanate - Polypropylene Glycol Polymer	9048-57-1	55 – 65
4,4'-Diphenylmethane Diisocyanate (MDI)	101-68-8	2 – 6
Xylenes (mixed isomers)	1330-20-7	27 – 33
Carbon Black	1333-86-4	3 – 7
Benzotriazole UV Absorber	104810-47-1, 104810-48-2	< 0.3
Hindered Amine Light Stabilizer	41556-26-7, 82919-37-7	< 0.3
Fumed Silica	112945-52-5	< 1

SECTION 4: FIRST-AID MEASURES

Inhalation: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult or symptoms (wheezing, tightness) develop, call a POISON CENTER or doctor immediately. Symptoms may be delayed.

Skin: Wash immediately with plenty of soap and water. Remove contaminated clothing. If irritation or rash occurs, get medical advice/attention.

Eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do. Continue rinsing. Get medical attention if irritation persists.

Ingestion: Do NOT induce vomiting. Rinse mouth. Get medical attention immediately.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media: Alcohol-resistant foam, dry chemical, carbon dioxide. Do not use solid water stream.

Specific Hazards: Flammable liquid and vapor. Vapors heavier than air. Closed containers may rupture. Combustion products: carbon oxides, toxic fumes, possible isocyanates.

Special Protective Equipment: Wear self-contained breathing apparatus (SCBA) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Eliminate ignition sources. Ventilate area. Wear PPE including respiratory protection for isocyanates.

Environmental Precautions: Prevent entry into drains or waterways.

Methods for Cleanup: Cover spill with inert absorbent. Deactivate with 5–10% ammonium hydroxide solution. Collect in open containers, add more ammonia, cover loosely. Dispose as hazardous waste.

SECTION 7: HANDLING AND STORAGE

Handling: Ground/bond container and receiving equipment. Use explosion-proof equipment. Avoid breathing vapors or spray mist. Avoid contact with skin and eyes. **Contains isocyanates** — persons with prior sensitization should not be exposed. Wash hands thoroughly after handling.

Storage: Store in a cool, dry, well-ventilated place. Keep container tightly closed. Protect from moisture (MDI reacts with water). Ideal storage temperature: 40–77°F (5–25°C).

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Component	OSHA PEL	ACGIH TLV
4,4'-MDI (101-68-8)	0.02 ppm Ceiling	0.005 ppm TWA
Xylenes (1330-20-7)	100 ppm TWA	100 ppm TWA / 150 ppm STEL
Carbon Black (1333-86-4)	3.5 mg/m ³ TWA	3 mg/m ³ (inhalable)
Fumed Silica (112945-52-5)	5 mg/m ³ (respirable)	10 mg/m ³ (total dust)

Engineering Controls: Explosion-proof local exhaust ventilation.

PPE:

- **Eye/Face:** Chemical splash goggles.
- **Skin:** Nitrile or butyl rubber gloves + impervious clothing.
- **Respiratory:** NIOSH-approved organic vapor + particulate respirator. For spraying or poor ventilation, use supplied-air respirator.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Black liquid	Odor: Aromatic solvent (xylene-like)	Flash Point: ≈ 25 °C (77 °F) PMCC
Boiling Point: ≈ 138–144 °C (xylene)	Density: 1.00 – 1.10 g/cm ³	VOC: ≈ 280–320 g/L
Solubility in Water: Reacts slowly	Vapor Density: Heavier than air	Evaporation Rate: Slower than ether

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Reacts with water, alcohols, amines → CO₂, heat, pressure.

Stability: Stable when kept dry and away from moisture.

Conditions to Avoid: Heat, sparks, open flames, moisture.

Incompatible Materials: Water, alcohols, amines, strong acids/bases, oxidizers.

Hazardous Decomposition Products: Carbon oxides, toxic fumes, possible isocyanates (fire conditions).

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin contact, eye contact.

Symptoms: Eye/skin irritation, respiratory irritation, possible allergic skin or asthma-like reactions (delayed). High vapors may cause drowsiness/dizziness.

Component Data:

- **4,4'-MDI (101-68-8):** Strong respiratory and skin sensitizer. May cause asthma-like symptoms.
- **Xylenes (1330-20-7):** LD50 Oral (rat) ≈ 4300 mg/kg
- **Carbon Black (1333-86-4):** IARC Group 2B (possibly carcinogenic via inhalation of dust)

Carcinogenicity: Carbon black (IARC 2B via inhalation).

Sensitization: May cause respiratory and skin sensitization due to MDI.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity: Xylenes toxic to aquatic life. Prevent release into waterways.

Persistence: Xylenes biodegradable. MDI reacts with water to form polyureas.

SECTION 13: DISPOSAL CONSIDERATIONS

Hazardous waste (ignitable + health hazard). Incinerate in licensed facility. Do not discharge to drains. Decontaminate residues before disposal.

SECTION 14: TRANSPORT INFORMATION

UN Number: UN1263
Proper Shipping Name: PAINT
Hazard Class: 3
Packing Group: III
Label: FLAMMABLE LIQUID

US DOT / IMDG / IATA: Regulated as above.

SECTION 15: REGULATORY INFORMATION

TSCA: All components listed or exempt.

SARA 311/312: Fire Hazard, Acute Health Hazard, Chronic Health Hazard.

SARA 313: Xylenes (1330-20-7) reportable.

California Proposition 65: Contains carbon black (known to cause cancer via inhalation). www.P65Warnings.ca.gov

SECTION 16: OTHER INFORMATION

NFPA Rating

Health: 3
Flammability: 3
Instability: 1 (W)

HMIS Rating

Health: 3*
Flammability: 3
Physical Hazard: 1
* = chronic + isocyanate sensitization hazard

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Disclaimer

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*** END OF SAFETY DATA SHEET ***