Safety Data Sheet (SDS)

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

Product identifier: Potassium Iodide Impregnated Granular Activated Carbon (KI-Impregnated GAC)
Synonyms: Potassium Iodide Impregnated Activated Carbon, KI-Impregnated Pelletized Activated Carbon
Recommended use: Adsorbent/catalyst support for air and gas purification (e.g., removal of acidic/sulfur-bearing/halogenated gases)
Uses advised against: Direct contact with food or drinking water (unless water-treatment grade and certified); medical implants
Supplier: Henan CarbonFresh Activated Carbon Co., Ltd.
Website::https://www.carbonfreshcn.com/
Email: info@carbonfreshcn.com
Phone: (+86) 155-3801-7198
Address: Enterprise Headquarters Base, Innovation Park, High-tech Zone, Zhengzhou, Henan, China

Section2 Composition / Information on Ingredients

Classification according to GHS/CLP (proposed; must be verified against the actual formulation):
Eye irritation, Category 2 (Eye Irrit. 2), H319: Causes serious eye irritation
Skin irritation, Category 2 (Skin Irrit. 2), H315: Causes skin irritation
Specific target organ toxicity — single exposure, Category 3 (STOT SE 3, respiratory irritation), H335: May cause respiratory irritation
Hazard to the aquatic environment: Typically not classified (activated carbon itself). KI is not highly toxic to aquatic life, but high salt concentrations can impact water bodies; if released in large amounts, can be treated as “not classified/not hazardous.” Reassess if other additives are present.
Label elements (CLP/OSHA):
Signal word: Warning
Pictogram: GHS07 (exclamation mark)
Hazard statements:
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation
Precautionary statements:
P261 Avoid breathing dust
P264 Wash exposed areas thoroughly after handling
P271 Use only outdoors or in a well-ventilated area
P280 Wear protective gloves/eye protection/face protection
P302+P352 IF ON SKIN: Wash with plenty of water
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
P332+P313 If skin irritation occurs: Get medical advice/attention
P337+P313 If eye irritation persists: Get medical advice/attention
P403+P233 Store in a well-ventilated place. Keep container tightly closed
Other hazards:
Hygroscopicity: KI is hygroscopic; elevated humidity may cause caking and alter surface properties
Incompatibility with strong oxidizers, strong acids/strong bases may lead to reactions
Dust can cause mechanical irritation and transient respiratory discomfort

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Section 3: Composition/Information on Ingredients

Substance/mixture: Mixture (multiphase solid)
Components (typical recommended ranges; subject to final confirmation):
Activated Carbon, CAS 7440-44-0, EC 931-328-0: 88–98%
Potassium Iodide (KI), CAS 7681-11-0, EC 231-659-4: 1–10% (typical 2–8% recommended)
Moisture and inert binders/forming aids: 0–2%

Section 4: First Aid Measures

General advice: Remove contaminated clothing. Seek medical attention if any discomfort persists.
Inhalation: Move to fresh air; if breathing is difficult, administer oxygen and seek medical attention.
Skin contact: Rinse with water and mild soap. Seek medical attention if irritation or erythema occurs.
Eye contact: Rinse cautiously with water for at least 15 minutes; seek medical attention.
Ingestion: Rinse mouth. Do not induce vomiting; seek medical attention. If large amounts are ingested, monitor for electrolyte (iodine/iodide) effects.
Most important symptoms and effects: Eye, skin, and respiratory irritation. For individuals with thyroid disorders, ingestion of large amounts of iodide may affect thyroid function.

Section 5: Firefighting Measures

Suitable extinguishing media: Water spray, foam, dry chemical, CO_2 . Coordinate with surrounding fire.
Specific hazards: Thermal decomposition may release iodine vapors and irritating fumes; carbon materials may generate CO/CO_2 .
Advice for firefighters: Wear positive-pressure SCBA and full protective gear. Contain firefighting water to prevent environmental release.

Section 6: Accidental Release Measures

Personal precautions: Avoid dust. Wear goggles, gloves, and particulate respiratory protection (e.g., P2/P3).
Environmental precautions: Prevent large releases into waterways or sewers.
Methods for containment and cleanup: Avoid dust generation; collect by dry mechanical means or damp sweeping; place in sealed containers; dispose in accordance with regulations.

Section 7: Handling and Storage

Handling: Avoid dust generation and inhalation; use local exhaust ventilation; avoid contact with incompatible substances; no eating or drinking in work areas.
Storage: Store in a cool, dry, well-ventilated place; keep tightly sealed, protected from moisture and strong light; keep away from strong acids, strong bases, and strong oxidizers; retain original packaging or use compatible containers.
Specific end use(s): Use as directed; do not exceed design operating conditions (temperature/humidity/gas type and concentration).

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Section 8: Exposure Controls/Personal Protection

Occupational exposure limits (reference, general nuisance dust limits; follow local regulations):
Inhalable dust: TWA 10 mg/m³ (ACGIH reference)
Respirable dust: TWA 3 mg/m³ (ACGIH reference)
KI (iodide): No unified OEL; control by process and dust limits

Engineering controls: Local exhaust plus general ventilation; prefer enclosed transfer/charging; prevent dust accumulation.

Personal protective equipment (PPE):
Respiratory protection: NIOSH/EN-certified particulate respirators during dusty work (P2/P3 or N95/N100)
Eye/face protection: Chemical safety goggles; add face shield when splash risk exists
Hand protection: Nitrile (NBR) or equivalent chemical-resistant gloves
Body protection: Work clothing; dust/chemical protective clothing as needed

Hygiene measures: Wash hands; launder contaminated clothing; provide eyewash and safety shower (recommended)

Section 9: Physical and Chemical Properties

Appearance: Black granules/pellets (may show slight gray-brown/salt speckling)
Odor: No obvious odor (may have faint iodine odor depending on loading and humidity)
pH (10% slurry): Approximately 6–9 (formulation-dependent; testing recommended)
Melting/freezing point: Not applicable (mixed solid)
Boiling point: Not applicable
Flash point: Not applicable (solid, non-volatile)
Auto-ignition temperature: Not determined (activated carbon dust may self-heat; avoid high temperatures and oil impregnation)
Explosive limits: Not applicable for granules; dusts may present a general dust explosion hazard under specific conditions (activated carbon dust)
Vapor pressure: Not applicable
Density/bulk density: 0.45–0.65 g/cm³ (typical; product-dependent)
Solubility: KI is readily soluble in water; overall material is insoluble
Partition coefficient log Kow: Not applicable (inorganic salt KI); activated carbon is a porous solid
Viscosity: Not applicable
Oxidizing properties: Not classified as an oxidizing mixture (KI is not a strong oxidizer), but the material can undergo halogen/halide exchange; keep away from strong oxidizers
Other: Provide tested values for surface area, iodine number, hardness, ash, etc., if available

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Section 10: Stability and Reactivity

Stability: Stable under recommended conditions. Hygroscopicity can alter surface properties.

Reactivity: Incompatible with strong acids, strong bases, and strong oxidizers; may undergo halogen exchange or adsorption–desorption with chlorinated/brominated compounds.

Possibility of hazardous reactions: At elevated temperatures or in strong acid media, iodine may be released; avoid coexistence with peroxides and strong oxidants.

Conditions to avoid: High temperature, humidity, strong light, dust generation.

Incompatible materials: Strong acids (especially strong oxidizing acids), strong bases, strong oxidizers, halogens, heavy metal salts, etc.

Hazardous decomposition products: Iodine, hydrogen iodide, CO, CO_2 , trace metal iodides (if metallic impurities present).

Section 11: Toxicological Information

Likely routes of exposure: Inhalation of dust, skin contact, eye contact, ingestion.

Acute toxicity: Mixture not classified for acute toxicity; KI oral toxicity is relatively low (rat LD50 > 2000 mg/kg, literature), but large ingestion may affect thyroid function.

Skin corrosion/irritation: Causes skin irritation (Skin Irrit. 2).

Serious eye damage/irritation: Causes eye irritation (Eye Irrit. 2).

Respiratory or skin sensitization: Data insufficient/not classified.

Germ cell mutagenicity/carcinogenicity/reproductive toxicity: No known basis for classification; chronic excessive iodide intake may alter thyroid function (non-occupational context).

STOT (single/repeated): Single exposure may cause respiratory irritation; repeated dust exposure may cause respiratory discomfort.

Aspiration hazard: Consider mechanical and mild chemical irritation in dust form.

Section 12: Ecological Information

Ecotoxicity: Low-to-moderate acute toxicity to aquatic life for KI (high salinity effects can stress algae/invertebrates); activated carbon is not significantly toxic to aquatic organisms.

Persistence and degradability: KI is an inorganic salt and will disperse/dilute in the environment; activated carbon is an inert solid that can adsorb pollutants.

Bioaccumulative potential: KI is not expected to bioaccumulate; activated carbon does not bioaccumulate.

Mobility in soil: Granules have low mobility; KI may migrate with water.

PBT/vPvB assessment: Not applicable/not fulfilling criteria.

Other adverse effects: Large releases may alter ionic strength and pH of water bodies.

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Section 13: Disposal Considerations

Waste treatment methods: Dispose as industrial solid waste/hazardous waste per local regulations; avoid discharge to sewers or natural waters.

Contaminated packaging: Dispose similarly; if fully emptied and compliant, packaging may be recycled.

Regulatory references: Follow applicable waste management regulations in your jurisdiction (e.g., US RCRA/EU Waste Framework Directive/China Solid Waste Law).

Section 14: Transport Information

UN number: Not regulated (in general circumstances)

Proper shipping name: Non-hazardous solid (recommended)

Transport hazard class(es): Not applicable

Packing group: Not applicable

Marine pollutant: No (typically)

Special precautions: Protect from moisture; prevent spillage and dusting; segregate from incompatible materials

Section 15: Regulatory Information

TSCA (US): Activated carbon and KI are generally listed on the TSCA Inventory (final verification required)

REACH (EU): Components are existing substances; if placed on the EU market at ≥1 t/y, ensure registration obligations or applicable exemptions

SARA/CERCLA (US): Typically not reportable; verify based on actual formulation and thresholds

California Prop 65: Not known to contain listed carcinogens/reproductive toxins (subject to verification)

Other national/regional inventories: Typically listed on AIIC, DSL, IECSC, KECI, PICCS, TCSI, TSCA, etc. (final confirmation required)

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