

CARBON MASTERBATCHES

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SECTION 1: IDENTIFICATION

1.1 GHS Product identifier:
CARBON MASTERBATCHES
Conductive/High-Loading Carbon Black Masterbatch (UV-protection / anti-static / conductive grades)
CAS: Proprietary blend (polymer carrier resin with pigment/additive dispersion – not a single-substance CAS number)

Other means of identification:
Not relevant

1.2 Recommended use of the chemical and restrictions on use:
Relevant uses: High-loading carbon black masterbatch used for enhanced UV/weathering protection, electrical conductivity or anti-static performance in pipes, cables, geomembranes, and industrial moulded/extruded plastic articles, beyond standard black colouring. For industrial user only – let down into base polymer at manufacturer-recommended dosage during plastics processing (extrusion, injection/blow moulding, film blowing).
Uses advised against: All uses not specified in this section or in section 7.3. Not for food-contact applications unless separately certified for that purpose.

1.3 Supplier's details:
SURAJ CHEMICALS
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1.4 Emergency phone number:
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SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:
GHS:
Classification of this product has been carried out in accordance with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). As supplied (solid pellets/granules with pigments and additives fully encapsulated/dispersed in a thermoplastic carrier resin), the product does not meet GHS classification criteria as a hazardous substance or mixture.

Not classified	Does not meet GHS classification criteria as a hazardous substance/mixture in the solid, as-supplied pellet form
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2.2 GHS label elements, including precautionary statements:
GHS: No signal word, pictogram or hazard statement required under GHS for the solid pellet as supplied.

Hazard statements:
None assigned.

Precautionary statements:
P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/eye protection where dust is generated (e.g. regrind grinding) or during hot processing.
P304+P340: IF INHALED (fume from thermal processing): Remove person to fresh air and keep comfortable for breathing.
P501: Dispose of contents/container in accordance with local regulations.

2.3 Other hazards which do not result in classification:
The principal functional component is carbon black at a higher loading than standard black colour masterbatches. IARC classifies carbon black as Group 2B (possibly carcinogenic to humans) based on inhalation studies with high concentrations of airborne carbon black dust; this relates to inhalation of free, respirable carbon black dust and not to carbon black encapsulated within the solid polymer pellet as supplied. High carbon black loading may also increase electrical conductivity of the finished pellet/compound – observe standard electrical safety precautions if used in conductive-compound applications. Thermal decomposition during processing at excessive temperatures, or in a fire, can release irritant fumes (see Sections 5 and 10). Fine dust generated during regrinding/pulverising of pellets should be controlled and not inhaled. Not identified as PBT/vPvB for the product as supplied; the exact identity and concentration of proprietary pigment/additive components is available on request under a signed confidentiality agreement.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.2 Mixtures:
Chemical description: High-loading carbon black masterbatch – polyolefin carrier resin with a high loading of conductive/UV-grade carbon black (CAS 1333-86-4) and dispersing aids, formulated for functional (UV-protective, conductive or anti-static) rather than purely decorative colouring purposes

Identification	Chemical Name / Classification	Concentration
Proprietary	Thermoplastic carrier resin (e.g. PE/PP/EVA base, grade dependent) – Not classified	Balance (typically 50–80% w/w)
Proprietary	Pigment(s)/functional additive(s) dispersed in the carrier resin – see product-specific technical data sheet; individual components may carry their own classification in concentrated/raw form (see Section 3 note below)	Available on request (typically 20–50% w/w active loading, grade dependent)

Exact composition, pigment/additive CAS numbers and concentrations are proprietary and available on request. To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:
Under normal handling of the solid pellet, first aid is generally not required. If needed (principally relevant to processing fume/dust exposure):

By inhalation:
If fume from thermal processing or dust from regrinding causes irritation, remove the person to fresh air and keep at rest. Seek medical attention if symptoms persist.

By skin contact:
Wash affected skin with soap and water. If molten material contacts skin, cool immediately with plenty of cold water; do not peel off adhered molten polymer – seek medical attention for thermal burns.

By eye contact:
Rinse eyes thoroughly with plenty of water for several minutes, holding eyelids open. Seek medical attention if irritation persists.

By ingestion/aspiration:
Not applicable in normal use (solid pellet); if accidentally swallowed and discomfort occurs, seek medical advice.

4.2 Most important symptoms/effects, acute and delayed:
Not expected to cause adverse effects under normal handling of the solid pellet. Processing fumes may cause transient respiratory/eye irritation. See sections 2 and 11.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Not relevant; treat symptomatically if needed.

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

Suitable: Water spray, foam, dry chemical powder, carbon dioxide.
Unsuitable: High-pressure water jet may scatter burning material.

5.2 Specific hazards arising from the chemical:

Combustible thermoplastic solid. Burns readily once ignited; molten/burning polymer can drip and spread fire. Combustion generates dense smoke, carbon monoxide, carbon dioxide and, depending on carrier resin/additive package, other irritant or toxic decomposition products.

5.3 Special protective actions for fire-fighters:

Wear self-contained breathing apparatus and full fire-fighting protective clothing. Cool fire-exposed containers/storage with water spray from a safe distance. Avoid breathing smoke/fumes.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Spilled pellets create a slip hazard – sweep up promptly. Avoid generating and inhaling dust if regrinding/pulverising. Use PPE per Section 8.

For emergency responders:

No special measures beyond routine housekeeping/dust control PPE required.

6.2 Environmental precautions:

Prevent pellets/dust from entering drains or watercourses; plastic pellets are a recognised source of environmental microplastic pollution if released to the environment – contain and recover spills.

6.3 Methods and materials for containment and cleaning up:

Sweep or vacuum up spilled pellets/dust and place in a suitable labelled container for reuse (preferred, subject to quality control) or disposal.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A. General precautions for safe use:

Handle in accordance with good manufacturing practice for plastics processing. Avoid generating and breathing dust during regrind operations. Provide adequate ventilation/fume extraction at processing equipment (extruders, moulding machines).

B. Technical recommendations for the prevention of fires and explosions:

Keep away from open flames and hot surfaces above the product's processing temperature range. Control accumulation of fine dust in pneumatic conveying/regrinding systems; bond/earth equipment to control static electricity.

C. Technical recommendations on general occupational hygiene:

Do not eat, drink or smoke during handling; wash hands after handling.

D. Technical recommendations to prevent environmental risks:

Prevent pellets/dust from entering drains or the environment; use containment trays/bunding at handling and loading points.

7.2 Conditions for safe storage, including any incompatibilities:

A. Specific storage requirements:

Minimum Temp.	Ambient (protect from freezing/condensation causing caking)
Maximum Temp.	<40°C, away from direct sunlight and heat sources
Maximum time	12–24 Months (unopened original packaging, cool dry storage – consult product-specific technical data sheet)

B. General conditions for storage:

Store in a cool, dry, well-ventilated place away from direct sunlight and heat sources, in tightly closed bags/containers, off the ground.

7.3 Specific end use(s):

Except for the instructions already specified, it is not necessary to provide any special recommendation regarding the uses of this product; refer to the product-specific technical data sheet for recommended let-down ratios and processing conditions.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

No substance-specific occupational exposure limit is notified for the product as a whole under the Factories Act, 1948. Control as a nuisance/inert dust in solid pellet form; where processing fume is generated, control per general workplace fume/particulate guidance:

Identification	Occupational Exposure Limit Type	Value
Product (as total dust/fume, general/particulates-not-otherwise-classified basis)	Time Weighted average concentration (8 hrs), total dust	10 mg/m³ (general nuisance dust guidance)
	Time Weighted average concentration (8 hrs), respirable fraction	3 mg/m³ (general nuisance dust guidance)

8.2 Appropriate engineering controls:

Provide local exhaust ventilation/fume extraction at extrusion, moulding and regrind operations. Consult manufacturer's leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection:

Not normally required for handling of pellets. Use a particulate respirator during regrinding/dust-generating operations, and where fume extraction is inadequate at hot processing equipment.

C. Specific protection for the hands:

Protective gloves recommended for prolonged handling; heat-resistant gloves for handling molten material.

D. Eye and face protection:

Safety glasses recommended where dust is generated; face shield when handling molten/hot material.

E. Bodily protection:

Standard work clothing; heat-resistant clothing/apron for molten-material handling.

F. Additional emergency measures:

Eyewash station recommended in the work area.

Environmental exposure controls:

Avoid environmental spillage of both the product and its container/packaging. See subsection 7.1.D.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance	
Physical state at 20°C	Solid (pellets/granules)

Appearance	Cylindrical/spherical pellets
Color	Black
Odor	Faint characteristic polymer odor, practically odourless
Odour threshold	Not relevant *
Volatility	
Boiling point at atmospheric pressure	Non-applicable (decomposes before boiling)
Vapour pressure at 20°C / 50°C	Not relevant *
Evaporation rate at 20°C	Not relevant *
Product Description	
Density at 20°C	Approx. 1.0–1.4 g/cm³ (carbon black loading dependent, typically 30–50% active for functional grades)
Dynamic / Kinematic viscosity	Non-applicable in solid state; melt viscosity grade/temperature dependent (available on request)
Concentration (active pigment/additive loading)	Available on request (grade dependent)
pH	Non-applicable (insoluble solid)
Vapour density at 20°C	Not relevant *
Partition coefficient n-octanol/water 20°C	Not applicable (solid polymer article)
Solubility in water at 20°C	Insoluble/practically insoluble
Decomposition temperature	Above normal processing range; thermal degradation may begin above approx. 250°C depending on carrier resin
Melting point/freezing point	Softens/melts in line with carrier resin, typically 105–170°C (PE/PP grade dependent)
Flammability	
Flash Point	Non-applicable (solid polymer article)
Flammability (solid, gas)	Combustible solid; burns when exposed to a sustained ignition source, in line with the base carrier resin
Autoignition temperature	Available on request (carrier resin dependent, typically >300°C)
Lower / Upper flammability limit	Not relevant for the solid pellet; fine dust from regrinding may be combustible *
Particle Characteristics	
Median equivalent diameter	Approx. 2–4 mm (standard pellet, grade dependent)

* Not relevant due to the nature of the product, not providing information on the properties of its hazards.

9.2 Other information:

Explosive properties	Not explosive; fine dust from regrinding may present a combustible dust hazard under specific conditions
Oxidising properties	Not oxidising
Corrosive to metals	Not corrosive to metals under normal conditions
Heat of combustion	Available on request (carrier resin dependent)
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

SECTION 10: STABILITY AND REACTIVITY

- 10.1 Reactivity:**
No hazardous reactivity expected under normal conditions of storage, handling and processing. Can react with strong oxidising agents at elevated temperature.
- 10.2 Chemical stability:**
Chemically stable under the indicated conditions of storage, handling and use; degrades on prolonged exposure to UV/sunlight and elevated temperature (properties depend on carrier resin and additive package).
- 10.3 Possibility of hazardous reactions:**
Under normal conditions, hazardous reactions are not expected. Overheating during processing (above recommended processing temperature) can cause thermal degradation and release of fumes.
- 10.4 Conditions to avoid:**

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Slow oxidative ageing on prolonged exposure	Avoid overheating beyond recommended processing range (risk of decomposition)	Prolonged UV exposure may affect colour/properties	Some grades hygroscopic – protect from moisture to avoid processing defects

10.5 Incompatible materials:

Strong Oxidising Agents	Strong Acids/Bases	Incompatible Polymers (processing cross-contamination)
Risk of reaction at elevated temperature	Avoid contact	May affect finished-part properties; avoid mixing with incompatible resin systems

- 10.6 Hazardous decomposition products:**
On combustion or thermal decomposition above recommended processing temperature: carbon monoxide, carbon dioxide, smoke, and other decomposition products depending on carrier resin and additive package (e.g. aldehydes, ketones; halogenated fumes only if a halogenated additive is present – see product-specific technical data sheet).

SECTION 11: TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects:**
The product as supplied (solid pellet with pigments/additives dispersed/encapsulated in the polymer matrix) is not expected to present a significant health hazard under normal handling. Carbon black (CAS 1333-86-4) is classified by IARC as Group 2B (possibly carcinogenic to humans), based on evidence from inhalation studies with high, sustained airborne dust concentrations; this hazard relates specifically to inhalation of free, respirable carbon black dust and is not relevant to normal handling of the solid, pigment-encapsulated pellet. Avoid generating and inhaling dust if this masterbatch is reground/pulverised (see Sections 7 and 8).
- A. Ingestion (acute effect):**
Acute toxicity classification criteria are not met based on available data; the solid pellet is not readily ingested and is of low intrinsic toxicity.
- B. Inhalation (acute effect):**
Not classified for the solid pellet. Dust from regrinding, or fume from processing at excessive temperature, may cause respiratory irritation.
- C. Contact with skin and eyes (acute effect):**
Not classified as irritating based on available data for the solid pellet; molten material can cause thermal burns.
- D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity):**
Classification criteria for carcinogenicity, mutagenicity and reproductive toxicity are not met for the product as supplied based on available data. See also the carbon black pigment note above regarding IARC Group 2B classification, applicable only to free respirable dust, not the encapsulated pellet.
- E. Sensitizing effects:**
Classification criteria for respiratory or skin sensitisation are not met based on available data.

F. Specific target organ toxicity (STOT) – single exposure:

Classification criteria are not met based on available data.

G. Specific target organ toxicity (STOT) – repeated exposure:

Classification criteria are not met based on available data.

H. Aspiration hazard:

Non-applicable (solid article, not a liquid).

Product-specific toxicological information:

Identification	Acute Toxicity	Genus
Product (as supplied, solid pellet)	LD50 oral: Not applicable/not classified (solid article)	–
Individual pigment/additive components	Available on request	–

SECTION 12: ECOLOGICAL INFORMATION

Not classified as hazardous to the aquatic environment based on available data for the product as supplied (insoluble solid). Plastic pellets/dust released to the environment can contribute to microplastic pollution – see 12.6.

12.1 Toxicity:

Acute Toxicity	Species	Genus
LC50: Not applicable (insoluble solid article)	Non-applicable	Fish
EC50: Not applicable (insoluble solid article)	Non-applicable	Crustacean

12.2 Persistence and degradability:

The carrier polymer resin is not readily biodegradable under normal environmental conditions.

12.3 Bioaccumulative potential:

Not expected to bioaccumulate as the bulk solid; not established for individual proprietary pigment/additive components.

12.4 Mobility in soil:

Koc	Henry	Dry Soil	Moist Soil
Not relevant (insoluble solid)	Not relevant	Low mobility (solid pellet)	Low mobility (solid pellet)

12.5 Results of PBT and vPvB assessment:

Not assessed for the mixture as a whole; not expected to meet PBT/vPvB criteria for the bulk polymer matrix.

12.6 Other adverse effects:

As with all plastic pellets/granules, avoid release to the environment – spilled pellets are a recognised contributor to environmental microplastic pollution if not recovered.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Disposal methods:

Recover for reuse/recycling where possible (subject to quality requirements). Dispose of via a licensed waste contractor in accordance with local plastics/general waste regulations; do not release pellets or dust to the environment or drains.
Refer to national and local regulations on waste management.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR 2023 / RID 2023):

14.1 UN number	Not assigned
14.2 UN proper shipping name	Non-hazardous for transport under ADR/RID
14.3 Transport hazard class(es)	Not classified
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by sea (IMDG 41-22):

14.1 UN number	Not assigned
14.2 UN proper shipping name	Non-hazardous for transport under IMDG
14.3 Transport hazard class(es)	Not classified
14.4 Packing group	N/A
14.5 Marine pollutant	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

Transport of dangerous goods by air (IATA/ICAO 2024):

14.1 UN number	Not assigned
14.2 UN proper shipping name	Non-hazardous for transport under IATA/ICAO
14.3 Transport hazard class(es)	Not classified
14.4 Packing group	N/A
14.5 Environmental hazard	No
14.6 Special precautions for user	Non-applicable
14.7 Transport in bulk (Annex II MARPOL 73/78, IBC Code)	Not relevant

SECTION 15: REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question:

It is recommended to use the information included in this safety data sheet as data used in a risk evaluation of local circumstances, in order to establish the necessary risk prevention measures for the manipulation, use, storage and disposal of this product.

Other legislation:

The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

SECTION 16: OTHER INFORMATION

Legislation related to safety data sheets:

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3:

Not applicable – product as supplied is not classified as hazardous under GHS based on available data. Individual proprietary components may carry their own classification in concentrated/raw form; details available on request.

Advice related to training:

Minimal training is recommended to prevent industrial risks for staff using this product, in order to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

Publicly available GHS classification guidance for plastics/masterbatch compounds; product-specific technical data sheet (available on request).

Abbreviations and acronyms:

ADR: European agreement concerning the international carriage of dangerous goods by road | IMDG: International maritime dangerous goods code | IATA: International Air Transport Association | ICAO: International Civil Aviation Organisation | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | PBT: Persistent, Bioaccumulative, Toxic | vPvB: very Persistent, very Bioaccumulative | PE: Polyethylene | PP: Polypropylene | EVA: Ethylene Vinyl Acetate

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

END OF SAFETY DATA SHEET