SAFETY DATA SHEET

CARBON BLACK (N330, ORIENT BLACK)

CAS No.: 1333-86-4

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

CARBON BLACK (N330, ORIENT BLACK)
Furnace black; Channel black (generic); ASTM grade N330
CAS: 1333-86-4

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Reinforcing filler/pigment for rubber (tyres, mechanical goods), plastics, inks and coatings. For industrial user only.
Uses advised against: All uses not specified in this section or in section 7.3.

Supplier's details

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2. HAZARDS IDENTIFICATION

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).

Not classified as hazardous under GHS acute physical/health hazard criteria; combustible dust hazard (see 2.3 and section 10)

GHS label elements, including precautionary statements

GHS: Not classified

Hazard statements

Not classified as hazardous under GHS physical, health or environmental hazard criteria.

Precautionary statements

P264: Wash hands thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area when handling dispersed dust.
P280: Wear protective gloves/eye protection where dust is generated.
General industrial hygiene and combustible-dust practices apply (bonding/grounding, ignition source control).

Other hazards which do not result in classification

Finely dispersed carbon black dust in air can form a combustible/explosible dust cloud – control ignition sources, static discharge and dust accumulation (housekeeping). IARC has classified carbon black as Group 2B (possibly carcinogenic to humans) based on very high-dose inhalation studies in animals; maintain exposure below the occupational exposure limit (section 8.1). Does not meet the PBT/vPvB criteria (insoluble, non-bioavailable in aquatic systems).

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical description: Carbon Black (N330) (technical/industrial grade)

In accordance with Annex 4.3.3 of the GHS, the product contains:

Identification	Chemical Name / Classification	Concentration
CAS: 1333-86-4	Carbon Black (N330) — Not classified as hazardous under GHS criteria	≥ 99% carbon (ASTM N330 grade)

To obtain more information on the hazards of the substances, consult sections 11, 12 and 16.

Mixtures

Non-applicable

4. FIRST AID MEASURES

Description of necessary first-aid measures

Request medical assistance if symptoms occur or persist, showing the SDS of this product.

By inhalation

Remove the person affected from the area of exposure to fresh air. Seek medical attention if discomfort persists.

By skin contact

Wash skin thoroughly with water. Remove contaminated clothing. Seek medical attention if irritation persists.

By eye contact

Rinse eyes thoroughly with lukewarm water for at least 15 minutes, holding eyelids open. Remove contact lenses if present and easy to do. Seek medical attention if irritation persists.

By ingestion/aspiration

Rinse the mouth with water. If a large quantity is swallowed or the person feels unwell, seek medical attention.

Most important symptoms/effects, acute and delayed

Acute and delayed effects are indicated in sections 2 and 11.

Indication of immediate medical attention and special treatment needed, if necessary	Not relevant – treat symptomatically

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	**Suitable:** Water spray/fog, foam, dry chemical powder, carbon dioxide – suit surrounding fire **Unsuitable:** None known
Specific hazards arising from the chemical	Bulk/pelletised material is difficult to ignite and does not readily support flaming combustion, but can smoulder. Finely dispersed dust in air can form a combustible/explosible dust cloud in the presence of an ignition source – assess per local dust hazard analysis (DHA) requirements.
Special protective actions for fire-fighters	Evacuate all non-essential personnel. Wear self-contained breathing apparatus and full protective clothing in case of significant fire involving this product. **Additional provisions** Cool fire-exposed containers with water spray. Contain fire-fighting water to prevent environmental release.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	**For non-emergency personnel** Isolate leaks provided there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilt product (see section 8). Evacuate the area and keep out those who do not have protection. **For emergency responders** Wear protective equipment. Keep unprotected persons away. See section 8.
Environmental precautions	Avoid dust generation. Prevent large quantities from entering drains or watercourses. Notify the relevant authority in case of significant environmental release.
Methods and materials for containment and cleaning up	Sweep up/vacuum (avoid generating dust) and place in a labelled container for reuse or disposal. Wash residual area with water.
Reference to other sections	See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling

A. General precautions for safe use
Minimise dust generation during handling/transfer; use local exhaust ventilation and dust extraction with appropriately rated (ATEX/DGMS-equivalent) equipment. Bond/ground equipment during bulk/pneumatic handling to control static discharge. Maintain good housekeeping to prevent dust accumulation.

B. Technical recommendations for the prevention of fires and explosions
Control ignition sources (sparks, open flame, hot surfaces, static electricity) in areas where dust is generated or may accumulate; use dust-tight, explosion-protected equipment as indicated by the site's combustible dust hazard assessment.

C. Technical recommendations on general occupational hygiene
Do not eat or drink during the process; wash hands afterwards with suitable cleaning products.

D. Technical recommendations to prevent environmental risks
Provide tight electrical equipment well protected against corrosion. Avoid atmospheric emissions. Warn people about the dangers of the product. Follow the protective measures given in the exposure controls/personal protection section. In industrial installations, apply the rules for the prevention of major accidents (consult an expert).

Conditions for safe storage, including any incompatibilities

A. Specific storage requirements

Minimum Temp.	Ambient
Maximum Temp.	40°C
Maximum time	No specific shelf-life limitation if kept dry; avoid prolonged storage in damp conditions

B. General conditions for storage
Store in a dry, well-ventilated warehouse away from ignition sources and oxidizing agents. Bulk silos/bins should be equipped with appropriate dust and static-discharge controls (bonding/grounding, explosion venting/relief where required by local dust-hazard assessment). For additional information see subsection 10.5.

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.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Substances whose occupational exposure limits have to be assessed in the workplace, per the Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987):

Identification	Occupational Exposure Limit Type	Value
Carbon Black CAS: 1333-86-4	ACGIH TLV – TWA (8 hrs, inhalable)	3 mg/m³
Carbon Black CAS: 1333-86-4	Factories Act reference – TWA (8 hrs, respirable)	3.5 mg/m³

Appropriate engineering controls

It is recommended to use localized extraction in the work area as a collective protection measure to avoid exceeding occupational exposure limits, in addition to individual protective equipment (PPE) as needed. Consult the manufacturer's information leaflet for storage, use, cleaning and maintenance of PPE.

B. Respiratory protection
Use a NIOSH/BIS-approved particulate respirator (e.g. N95/P2 or higher per exposure assessment) where local exhaust ventilation is not sufficient to control dust exposure below the occupational exposure limit.

C. Specific protection for the hands
Protective gloves for general handling (abrasion resistance for bulk/bag handling).

D. Eye and face protection
Safety glasses/goggles; dust-tight goggles for high-dust operations.

E. Bodily protection
Standard industrial workwear.

F. Additional emergency measures
Emergency shower (ANSI Z358-1, ISO 3864-1:2011, ISO 3864-4:2011) and eyewash stations (DIN 12 899, ISO 3864-1:2011, ISO 3864-4:2011) should be available.

Environmental exposure controls
Avoid environmental spillage of both the product and its container. See subsection 7.1.D.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	
Physical state at 20°C	Solid
Appearance	Fine powder or beaded/pelletised granules
Color	Black
Odor	Odorless
Odour threshold	Not relevant *
Volatility	
Boiling point at atmospheric pressure	Not relevant (sublimes only at extreme temperature, >4000°C)
Vapour pressure at 20°C	Negligible
Evaporation rate at 20°C	Not relevant (solid)
Product Description	
Density / Relative density at 20°C	~1.8–1.9 g/cm³ (true density); bulk density ~350–450 kg/m³ (pelletised)
Dynamic / Kinematic viscosity	Not relevant (solid)
Concentration	≥ 99% carbon (ASTM N330 grade)
pH (aqueous slurry)	~7–9 (neutral to slightly alkaline, grade-dependent)
Vapour density at 20°C	Not relevant *
Partition coefficient n-octanol/water 20°C	Not applicable (insoluble solid)
Solubility in water at 20°C	Insoluble
Decomposition temperature	Not relevant (thermally stable to very high temperature; oxidises/combusts above ~500°C)
Melting point/freezing point	Not applicable (sublimes at extreme temperature; no true melting point)
Flammability	
Flash Point	Non-applicable (solid)
Flammability (solid, gas)	Bulk material difficult to ignite; dispersed dust can form a combustible/explosible dust cloud
Autoignition temperature	~450–600°C (bulk); dust cloud minimum ignition temperature typically lower (grade-dependent)
Lower / Upper flammability limit	Minimum explosible concentration (dust cloud) typically ~50–100 g/m³ (grade-dependent)
Particle Characteristics	
Median equivalent diameter	Primary particle ~28–36 nm (N330 grade); supplied as pellets/beads typically 0.5–2 mm for handling

** Not relevant due to the nature of the product (solid, non-volatile), not providing information on the properties of its hazards.*

Other information

Explosive properties	Not explosive as bulk/pelletised material; finely dispersed dust can form an explosible dust cloud (Kst/dust class grade-dependent) – control ignition sources and dust accumulation
Oxidising properties	Not an oxidizer
Corrosive to metals	Not classified
Heat of combustion	~30–33 kJ/g (approx., as for carbon)
Surface tension at 20°C	Not relevant *
Refraction index	Not relevant *

10. STABILITY AND REACTIVITY

Reactivity

Chemically inert and unreactive under normal conditions of storage, handling and use. Finely dispersed dust presents a combustible dust hazard (see 9.2/10.4/10.5).

Chemical stability

Chemically stable under the indicated conditions of storage, handling and use.

Possibility of hazardous reactions

Under the specified conditions, hazardous reactions are not generally expected; see incompatibilities below.

Conditions to avoid

Shock/Friction	Contact with Air	Increase in Temperature	Sunlight	Humidity
Not applicable	Not applicable	Avoid elevated temperature/decomposition	Not applicable	Keep dry to avoid caking/degradation

Incompatible materials

Strong Oxidizing Agents	Ignition Sources (dust)	Static Discharge
Avoid contact – can support smouldering/combustion	Avoid – control sparks/open flame/hot surfaces where dust is airborne	Bond/ground equipment during bulk handling/pneumatic conveying

Hazardous decomposition products

Carbon monoxide and carbon dioxide on combustion; no hazardous decomposition under normal storage.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

In case of exposure that is repetitive, prolonged, or at high concentrations, adverse health effects may result depending on the means of exposure:

A. Ingestion (acute effect)

Practically non-toxic; very low acute oral toxicity.

B. Inhalation (acute effect)

Dust may cause mechanical irritation of the respiratory tract (nuisance-dust type effect); not classified as an acute inhalation toxicity hazard. Repeated/prolonged high-level dust exposure without adequate controls can contribute to reduced lung function (pneumoconiosis-type changes) – see G below.

C. Contact with skin and eyes (acute effect)

Not classified as a skin or eye irritant; dust may cause mechanical irritation of the eyes.

D. CMR effects (carcinogenicity, mutagenicity, reproductive toxicity)

IARC: Group 2B – possibly carcinogenic to humans (based on animal inhalation studies at very high dust concentrations; epidemiological evidence in humans is inconclusive). Not formally classified as a carcinogen under GHS/CLP for the substance carbon black as supplied. Classification criteria for mutagenicity and reproductive toxicity are not met based on available data.

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

Chronic, uncontrolled inhalation of high concentrations of respirable carbon black dust over years has been associated with reduced lung function in occupational studies; adherence to the occupational exposure limit (8.1) and engineering controls (8.2) is essential.

H. Aspiration hazard

Not applicable (solid).

Product-specific toxicological information

Identification	Acute Toxicity	Genus
Carbon Black (N330) CAS: 1333-86-4	LD50 oral: >8000 mg/kg (practically non-toxic)	Rat
	LD50 dermal: >3000 mg/kg (estimate)	Rabbit

12. ECOLOGICAL INFORMATION

Not classified as hazardous to the aquatic environment; insoluble and not bioavailable in the water column.

Toxicity

Identification	Acute Toxicity	Species	Genus
Carbon Black (N330) CAS: 1333-86-4	LC50: >1000 mg/L (96h, nominal loading; limited by insolubility)	Oncorhynchus mykiss	Fish
	EC50: >1000 mg/L (48h, nominal loading)	Daphnia magna	Crustacean

Persistence and degradability

Not biodegradable (elemental carbon); physically persistent as an inert particulate but not classified as hazardous under PBT criteria due to lack of toxicity/bioaccumulation.

Bioaccumulative potential

Not expected to bioaccumulate; insoluble, chemically and biologically inert particulate solid.

Mobility in soil

Koc	Henry	Dry Soil	Moist Soil
Very high (insoluble, strongly adsorbing solid)	Not applicable (insoluble)	Immobile	Immobile, settles/adsorbs to soil particles

Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of Annex XIII.

Other adverse effects

Not described

13. DISPOSAL CONSIDERATIONS

Disposal methods

Dispose of as solid industrial waste via a licensed waste contractor (landfill or as a fuel/filler in permitted co-processing), in accordance with local regulations. For packaging: empty thoroughly (avoid generating dust); bags/containers may be recycled where accepted.

Refer to national and local regulations on waste management, including the Hazardous and Other Wastes (Management and Transboundary Movement) Rules.

14. TRANSPORT INFORMATION

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

14.1 UN number	Not assigned – non-hazardous for transport (bulk/pelletised, non-airborne form)
14.2 UN proper shipping name	Non-applicable
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	Combustible dust in finely dispersed form – control ignition sources during bulk handling/loading; 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 – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
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 – non-hazardous for transport
14.2 UN proper shipping name	Non-applicable
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

15. REGULATORY INFORMATION

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

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
The Chemical Accidents (Emergency Planning, Preparedness, and Response) Rules, 1996
Public Liability Insurance Act, 1991

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

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3.

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

PubChem (National Library of Medicine); European Chemicals Agency (ECHA) classification and labelling inventory; United Nations Economic Commission for Europe (UNECE) Model Regulations; ACGIH Threshold Limit Values. IARC Monographs (Group 2B classification); ACGIH Threshold Limit Values documentation.

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 | COD: Chemical Oxygen Demand | BOD5: 5-day biochemical oxygen demand | BCF: Bioconcentration factor | LD50: Lethal Dose 50 | LC50: Lethal Concentration 50 | EC50: Effective Concentration 50 | Log-POW: Octanol-water partition coefficient | Koc: Partition coefficient of organic carbon | IARC: International Agency for Research on Cancer

Disclaimer: 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.

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