Technical Data Sheet

Kerosene - K1 Clean Burning Fuel

Alliance Code	Revised	Revision
kerosene-k1-clean-burning-fuel	2026-11-12	1.8

CAS number	UN number	Hazard class · packing group
8008-20-6	UN1223	3 · PG III
	Signal word: **Danger**	

Hazards

Flammable | Irritant / harmful | Health hazard | Environmental hazard — H226 H304 H315 H351 H411

Proper shipping name: Kerosene

IDENTITY & COMPOSITION

PRODUCT NAME
Kerosene - K1 Clean Burning Fuel

ALLIANCE CODE
kerosene-k1-clean-burning-fuel

GRADE
—

CONCENTRATION
—

CAS NUMBER
8008-20-6 Adjudicated

PRODUCT TYPE
Mixture

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Distillation, final boiling point	300 °C max	—	ASTM D86	Interpreted
Saybolt color	+16 min	—	ASTM D156	Interpreted
Copper strip corrosion, 3 hr @ 100 °C	3 max	—	ASTM D130	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Distillation, 10 % vol. recovered	205 °C max	—	ASTM D86	Interpreted
Flash point	38 °C min	—	ASTM D56 (Tag closed cup)	Interpreted
Freezing point	-30 °C max	—	ASTM D2386	Interpreted
Mercaptan sulfur	0.003 % mass max	—	ASTM D3227	Interpreted
Sulfur (No. 1-K)	0.04 % mass max	—	ASTM D2622	Interpreted
API gravity @ 60 °F	40.0 - 46.0 °API	—	ASTM D4052 (digital density meter)	Interpreted
Distillation, 90 % vol. recovered	260 °C max	—	ASTM D86	Interpreted
Burning quality (char value, 16 h lamp burn)	20 mg/kg of oil burned max	—	ASTM D187	Interpreted
Aromatics (FIA)	25 % vol max	—	ASTM D1319	Interpreted

Values are reproduced from the current product reference. Source labels do not by themselves establish a supplier guarantee or a test result for your lot. Confirm applicable acceptance limits and request lot-specific documentation.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Clear, bright, water-white to very pale straw liquid, free of visible suspended matter and free water	Adjudicated
Form	Liquid	Published reference
Odor	Characteristic hydrocarbon (petroleum) odor	Adjudicated
pH	Not applicable	Adjudicated
Specific Gravity	0.78–0.84 at 15.6 °C (water = 1)	Adjudicated
Boiling Point	150-300 °C (302-572 °F) (distillation range)	Adjudicated
Melting Point	-30 °C (-22 °F) max, freezing point (ASTM D2386; D3699 No. 1-K limit)	Adjudicated
Flash Point	47 °C (116.6 °F), Tag closed cup (ASTM D56)	Adjudicated
Vapor Pressure	< 10 mmHg (< 1.3 kPa) at 20 °C	Adjudicated
Vapor Density	4–5 (air = 1)	Adjudicated
Solubility (water)	Insoluble in water	Adjudicated
Viscosity	1.0–1.9 mm^2/s (cSt) at 40 °C (ASTM D445; D3699 No. 1-K limits)	Adjudicated

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Good	80	Good for non-aromatic hydrocarbons; poor for aromatics.	Parker O-ring Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
EPDM Elastomer	Not recommended	—	Swells in hydrocarbons; never use.	Parker O-ring Chemical Compatibility
Viton (FKM) Elastomer	Excellent	100	Standard for hydrocarbon service.	Parker O-ring Chemical Compatibility
PTFE Fluoropolymer	Excellent	200	Universal.	Cole-Parmer Chemical Compatibility
316L Stainless Steel Metal	Excellent	100	Inert.	Cole-Parmer Chemical Compatibility
Carbon Steel Metal	Good	80	Acceptable for dry hydrocarbons.	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Fair	21	Some attack on long contact at room temperature. HDPE drums, pails and totes are standard containers for kerosene and mineral spirits. Not for heated service.	INEOS HDPE Chemical Resistance Guide

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN1223 Adjudicated

HAZARD CLASS

3 Adjudicated

PACKING GROUP

III Adjudicated

PROPER SHIPPING NAME

Kerosene Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H226, H304, H315, H351, H411 Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

P201, P202, P210, P233, P240, P241, P242, P243, P264, P273, P280, P301+P310, P302+P352, P303+P361+P353, P308+P313, P321, P331, P332+P313, P362, P370+P378, P391, P403+P235, P405, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

10 ppm TWA (CAS 91-20-3) Adjudicated

ACGIH TLV

200 mg/m^3 TWA (CAS 8008-20-6); 10 ppm TWA (CAS 91-20-3)

Adjudicated

NIOSH REL

100 mg/m^3 TWA (CAS 8008-20-6); 10 ppm TWA / 15 ppm STEL (CAS 91-20-3)

Adjudicated

NIOSH IDLH

250 ppm (CAS 91-20-3) Adjudicated

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

HEALTH & FIRE HAZARD

ACUTE TOXICOLOGY

LD$_{50}$ ORAL (RAT)

> 5000 mg/kg Adjudicated

LD$_{50}$ DERMAL (RABBIT)

> 2000 mg/kg Adjudicated

LC$_{50}$ INHALATION (RAT, 4 H)

> 5.28 mg/L Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

APPLICATIONS

Fuel for kerosene heaters, lamps and stoves designed for 1-K kerosene. Adjudicated

Restrictions on Use: Do not use in appliances designed for gasoline or other fuels. Use unvented heaters only with adequate ventilation (carbon monoxide hazard). Not for ingestion or medicinal use.

STORAGE & HANDLING

RECOMMENDED STORAGE

Store in tightly closed, labeled containers in a cool, well-ventilated area away from heat, sparks, open flame and direct sunlight. Keep away from oxidizers. Static-accumulating liquid: ground and bond containers when transferring. Never siphon by mouth.

Adjudicated

HANDLING PRECAUTIONS

Eliminate ignition sources. Use chemical-resistant nitrile or PVA gloves. Bond and ground all transfer equipment. Vapors heavier than air — control ventilation accordingly.

Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

Strong oxidizing agents; strong acids. Adjudicated

SHELF LIFE

Consult Technical Services for product-specific shelf life

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

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UN1223, Kerosene, 3, PG III
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Packaging-dependent regulation: Non-bulk packaging (≤ 119 gal, e.g. drums, pails, cans) ships as NON-REGULATED under the combustible-liquid reclassification (49 CFR 173.150(f)). Bulk packaging (totes/IBC > 119 gal) ships fully regulated under the DOT profile shown above. The combustible-liquid reclassification does not apply to transportation by vessel or aircraft, except where other means of transportation is impracticable (49 CFR 173.120(b)(2)).

Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS	PLACARD (BULK ONLY)	PACKING GROUP
77.5	Flammable Liquid	PG III

REVISION HISTORY

Last reviewed 2026-10-13 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.8	2026-11-12	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • `flashPoint` · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.7	2026-10-13	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • storage_precautions · canonical change (coa.data_provenance / adjudication) • incompatible_materials · canonical change (coa.data_provenance / adjudication) • conditions_to_avoid · canonical change (coa.data_provenance / adjudication) • hazardous_decomposition_products · canonical change (coa.data_provenance / adjudication)	canonical_change
1.6	2026-10-05	Canonical data updated: 19 fields changed via the provenance/adjudication pipeline. • oel_niosh_rel · canonical change (coa.data_provenance / adjudication) • ghsClassification · canonical change (coa.data_provenance / adjudication) • hazard_h_codes · canonical change (coa.data_provenance / adjudication) • hazard_p_codes · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication) • vaporDensity · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • viscosity · canonical change (coa.data_provenance / adjudication) • explosiveLimits · canonical change (coa.data_provenance / adjudication) • autoIgnitionTemperature · canonical change (coa.data_provenance / adjudication) • oel_osha_pel · canonical change (coa.data_provenance / adjudication) • oel_idlh · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication) • restrictions_on_use · canonical change (coa.data_provenance / adjudication) • synonyms · canonical change (coa.data_provenance / adjudication)	canonical_change
1.5	2026-09-30	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • molecularWeight · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change
1.4	2026-09-10	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • flashPoint · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-07-22	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication) • dotProperShippingName · canonical change (coa.data_provenance / adjudication)	canonical_change
1.2	2026-07-17	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. • ghsClassification · canonical change (coa.data_provenance / adjudication) • hazard_h_codes · canonical change (coa.data_provenance / adjudication) • hazard_p_codes · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-07-17	Canonical data re-verified: 9 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). • bulkThresholdGallons · canonical adjudication / reground (coa.data_provenance) • casNumber · canonical adjudication / reground (coa.data_provenance) • countryOfOrigin · canonical adjudication / reground (coa.data_provenance) • ghsClassification · canonical adjudication / reground (coa.data_provenance) • hazard_h_codes · canonical adjudication / reground (coa.data_provenance) • hazard_p_codes · canonical adjudication / reground (coa.data_provenance) • hsCode · canonical adjudication / reground (coa.data_provenance) • regulationRule · canonical adjudication / reground (coa.data_provenance) • signalWord · canonical adjudication / reground (coa.data_provenance)	canonical_change
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.