

TECHNICAL DATA SHEET

Ferric Chloride 40% Water Treatment Grade

Reagent · 40%

CAS NUMBER	ALLIANCE CODE	GENERATED
7705-08-0	ferric-chloride-40	2026-08-31
REVISION	REVIEWED	
1.4	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Ferric Chloride 40% Water Treatment Grade	ferric-chloride-40
GRADE	CONCENTRATION
Reagent	40%
CAS NUMBER	FORMULA
7705-08-0 PubChem	Cl3Fe PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
162.20 PubChem	solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (FeCl3)	38 – 42 %	40 %	—	Supplier specification
Ferrous chloride (FeCl2)	2.5 % max	0.091 %	—	Supplier specification
Ferrous (as Fe2)	Max 0.5% (w/w)	0.040% (w/w)	—	Supplier specification
Iron (Fe, total)	13.8 ± 0.4 %	13.8 %	—	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Sulfate (SO ₄ 2-)	< 0.5 %	0.080 %	—	Supplier specification
Free acid (as HCl)	1.0 % max	0.30 %	—	Supplier specification
Total insoluble matter	0.2 % max	0.020 %	—	Supplier specification
Arsenic (As)	Max 3 mg/kg	0.40 mg/kg	ICP-MS / EPA 200.8	Interpreted
Lead (Pb)	Max 5 mg/kg	0.50 mg/kg	ICP-MS / EPA 200.8	Interpreted
Mercury (Hg)	Max 0.5 mg/kg	0.005 mg/kg	Cold vapour AAS / EPA 245.1	Interpreted

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE Reagent	40%	—	current
Technical	10%	—	ferric-chloride-10
Technical	—	—	ferric-chloride-20
Technical	—	—	ferric-chloride-30

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Dark brown liquid	Published reference
Form	Liquid	Published reference
Odor	Slight hydrochloric acid odor	Published reference
pH	< 1	Supplier specification
Specific Gravity (20 °C)	39.900 – 47.700 DB	Supplier specification
Density	1.40–1.43 g/cm ³ (40%, 20°C)	Published reference
Boiling Point	~104 °C	Published reference
Melting Point	< –20 °C	Published reference
Flash Point	Not applicable (non-combustible aqueous solution)	Published reference
Solubility (water)	Miscible with water	Published reference

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
fiberglass tank	Compatible	—	scribd.com
plastic tank (type unspecified)	Compatible	—	scribd.com
metals (unspecified)	Not recommended	—	thaichloride.com
fiberglass	Compatible	—	scribd.com

MATERIAL	RATING	CONDITIONS	SOURCE
plastic	Compatible	—	scribd.com

Compatibility is drawn from published manufacturer and supplier documentation for this product; each rating is sourced. Confirm against your specific duty cycle before equipment selection.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

UN2582 49 CFR 172.101

HAZARD CLASS

8 Adjudicated

PACKING GROUP

III Adjudicated

PROPER SHIPPING NAME

Ferric chloride, solution Adjudicated

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H290, H302, H314, H315, H318, H412

Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

P234, P260, P264, P270, P273, P280,
P301+P312, P301+P330+P331, P302+P352,
P303+P361+P353, P304+P340,
P305+P351+P338, P310, P313, P321, P330,
P332+P313, P362, P363, P390, P405, P406,
P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— no canonical

ACGIH TLV

— no canonical

NIOSH REL

— no canonical

NIOSH IDLH

— no canonical

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

APPLICATIONS

Coagulant for water quality improvement, municipal wastewater treatment, and industrial wastewater treatment

thaichloride.com

Removal of phosphates and heavy metals (lead, cadmium, mercury) from wastewater

thaichloride.com

Dissolving metals such as copper and zinc (metal etching / pickling) thaichloride.com

Coagulant for potable water and wastewater treatment scribd.com

Municipal and industrial water and wastewater treatment (37–42% ferric chloride solution)

corecheminc.com

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

Store in a dry place, away from sources of ignition and heat. Avoid direct sunlight and keep in a well-ventilated area. Once opened, use within a limited time.

thaichloride.com

INCOMPATIBILITIES

Specific incompatibilities depend on the salt — consult the SDS. Many salts react with strong acids to release gases.

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

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.

HANDLING PRECAUTIONS

Standard chemical PPE — dust mask and goggles for handling of fine grades. Avoid generating airborne dust.

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

SHELF LIFE

Consult Technical Services for product-specific shelf life

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

UN2582, Ferric chloride, solution, 8, PG III

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

NMFC CLASS
65

PLACARD
Corrosive

PACKING GROUP
PG III

REVISION HISTORY

Last reviewed 2026-07-17 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change
1.3	2026-07-22	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. - dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication) - ghsClassification · canonical change (coa.data_provenance / adjudication) - dotProperShippingName · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-07-17	Canonical data re-verified: 7 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). - 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) - physicalProperties · canonical adjudication / reground (coa.data_provenance) - specificGravity · canonical adjudication / reground (coa.data_provenance)	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
1.0	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.