



**KPTCHEM™**

**FINE CHEMICALS** (EL GRADE)  
For Electronic and Solar Energy Industries

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## SODIUM HYDROXIDE (NaOH)

Inspection Parameter	Specification	Measuring Unit
NaOH	44-46	%
CO <sub>3</sub> <sup>2-</sup>	≤1.0	%
Clarity Test	No turbidity	/
Cl <sup>-</sup>	≤50	ppm
SO <sub>4</sub> <sup>2-</sup>	≤30	ppm
PO <sub>4</sub> <sup>3-</sup>	≤20	ppm
Fe	≤5	ppm
Al	≤5	ppm
Ca	≤10	ppm
Ni	≤1	ppm
Zn	≤2	ppm

## HYDROGEN PEROXIDE (H<sub>2</sub>O<sub>2</sub>)

Inspection Parameter	Specification	Measuring Unit
H <sub>2</sub> O <sub>2</sub>	26-28	%
Particles count (≥1.0μm)	≤25	/ml
Evaporation residue	≤0.004	w/%
Acidity (As H <sup>+</sup> )	≤25	mmol/100g
Color	≤10	sn
Appearance	Colorless Transparent Liquid	/
Nitrate	≤400	ppm
Chloride	≤2000	ppb
Sulfate	≤2000	ppb
Phosphate	≤2000	ppb
Total Nitrogen	≤500	ppb
Al	≤100	ppb
As	≤50	ppb
Ba	≤100	ppb
B	≤20	ppb
Bi	≤20	ppb
Cd	≤50	ppb
Ca	≤200	ppb
Cr	≤20	ppb
Co	≤20	ppb
Cu	≤20	ppb
Ga	≤20	ppb
Au	≤50	ppb
Fe	≤100	ppb
Pb	≤50	ppb
Li	≤20	ppb
Mg	≤100	ppb
Mn	≤50	ppb
Mo	≤100	ppb
Ni	≤50	ppb
K	≤1000	ppb
Ag	≤20	ppb
Na	≤300	ppb
Pt	≤100	ppb
Sn	≤20	ppb
Ti	≤100	ppb
Zn	≤100	ppb

## HYDROCHLORIC ACID (HCl)

Inspection Parameter	Specification	Measuring Unit
HCl	36-38	%
Particle count ( $\geq 1.0\mu\text{m}$ )	$\leq 25$	/ml
Color	$\leq 10$	Hazen
Appearance	Colorless Transparent Liquid	/
Free halogen (CL <sub>2</sub> )	$\leq 500$	ppb
Particle count ( $\geq 0.5\mu\text{m}$ )	$\leq 25$	/ml
SO <sub>4</sub> <sup>2-</sup>	$\leq 1000$	ppb
SO <sub>3</sub> <sup>2-</sup>	$\leq 1000$	ppb
PO <sub>4</sub> <sup>3-</sup>	$\leq 1000$	ppb
Ignition residue	$\leq 5000$	ppb
Li	$\leq 10$	ppb
B	$\leq 50$	ppb
Na	$\leq 500$	ppb
Mg	$\leq 100$	ppb
Al	$\leq 50$	ppb
K	$\leq 200$	ppb
Ca	$\leq 200$	ppb
Ti	$\leq 50$	ppb
Cr	$\leq 20$	ppb
Mn	$\leq 20$	ppb
Fe	$\leq 100$	ppb
Co	$\leq 20$	ppb
Ni	$\leq 20$	ppb
Cu	$\leq 20$	ppb
Zn	$\leq 50$	ppb
Ga	$\leq 20$	ppb
As	$\leq 10$	ppb
Mo	$\leq 100$	ppb
Ag	$\leq 20$	ppb
Cd	$\leq 50$	ppb
Sn	$\leq 50$	ppb
Ba	$\leq 100$	ppb
Au	$\leq 100$	ppb
Pb	$\leq 20$	ppb
Bi	$\leq 20$	ppb

## HYDROFLUORIC ACID (HF)

Inspection Parameter	Specification	Measuring Unit
HF	48-50	%
Color	≤10	Hazen
Appearance	Colorless Transparent Liquid	/
H <sub>2</sub> SiF <sub>6</sub>	≤100	ppm
Particle count (≥0.5um)	≤50	/ml
Particle count (≥1um)	≤25	/ml
CL-	≤5000	ppb
NO <sup>3-</sup>	≤3000	ppb
PO <sub>4</sub> <sup>3-</sup>	≤1000	ppb
SO <sub>4</sub> <sup>2-</sup>	≤5000	ppb
Li	≤20	ppb
Be	≤100	ppb
B	≤20	ppb
Na	≤100	ppb
Mg	≤100	ppb
Al	≤100	ppb
K	≤100	ppb
Ca	≤100	ppb
Ti	≤100	ppb
V	≤100	ppb
Cr	≤20	ppb
Mn	≤20	ppb
Fe	≤100	ppb
Co	≤20	ppb
Ni	≤50	ppb
Cu	≤20	ppb
Zn	≤50	ppb
Ga	≤20	ppb
Ge	≤100	ppb
As	≤50	ppb
Sr	≤100	ppb
Zr	≤100	ppb
Nb	≤100	ppb
Mo	≤100	ppb
Ag	≤20	ppb
Cd	≤50	ppb
Sn	≤20	ppb
Ba	≤100	ppb
Ta	≤100	ppb
Au	≤20	ppb
Tl	≤100	ppb
Pb	≤50	ppb
Bi	≤20	ppb
Pt	≤100	ppb

## NITRIC ACID (HNO<sub>3</sub>)

Inspection Parameter	Specification	Measuring Unit
HNO <sub>3</sub>	68-70	%
Color	≤10	Hazen
Appearance	Colorless Transparent Liquid	/
Particle (≥0.5um)	≤50	count/ml
Particle (≥1um)	≤25	count/ml
CL-	≤500	ppb
PO <sub>4</sub> <sup>3-</sup>	≤500	ppb
SO <sub>4</sub> <sup>2-</sup>	≤500	ppb
Li	≤10	ppb
B	≤20	ppb
Na	≤300	ppb
Mg	≤100	ppb
Al	≤50	ppb
K	≤100	ppb
Ca	≤100	ppb
Ti	≤50	ppb
Cr	≤20	ppb
Mn	≤20	ppb
Fe	≤200	ppb
Co	≤20	ppb
Ni	≤20	ppb
Cu	≤20	ppb
Zn	≤50	ppb
Ga	≤20	ppb
As	≤10	ppb
Mo	≤100	ppb
Ag	≤20	ppb
Cd	≤50	ppb
Sn	≤50	ppb
Ba	≤100	ppb
Au	≤100	ppb
Pb	≤50	ppb
Bi	≤20	ppb
Pt	≤100	ppb

## SULPHURIC ACID (H<sub>2</sub>SO<sub>4</sub>)

Inspection Parameter	Specification	Measuring Unit
H <sub>2</sub> SO <sub>4</sub>	96-98	%
Color	≤10	Hazen
Appearance	Colorless Transparent Liquid	/
CL-	≤200	ppb
Particle count (≥0.5um)	≤25	/ml
NO <sup>3-</sup>	≤200	ppb
PO <sub>4</sub> <sup>3-</sup>	≤500	ppb
Li	≤50	ppb
B	≤50	ppb
Na	≤200	ppb
Mg	≤50	ppb
Al	≤50	ppb
K	≤100	ppb
Ca	≤200	ppb
Ti	≤50	ppb
Cr	≤20	ppb
Mn	≤20	ppb
Fe	≤100	ppb
Co	≤20	ppb
Ni	≤20	ppb
Cu	≤20	ppb
Zn	≤50	ppb
Ga	≤20	ppb
As	≤10	ppb
Mo	≤10	ppb
Ag	≤20	ppb
Cd	≤50	ppb
Sn	≤10	ppb
Ba	≤200	ppb
Au	≤10	ppb
Pb	≤50	ppb
Bi	≤20	ppb
Pt	≤10	ppb



# ANHYDROUS AMMONIA WITH HIGH PURITY (NH<sub>3</sub>)





## ANHYDROUS AMMONIA WITH HIGH PURITY (NH<sub>3</sub>)

Item	Purity	Purity	Purity
Ammonia(NH <sub>3</sub> )	≥99.9995%	≥99.9999%	≥99.99999%
Hydrogen (H <sub>2</sub> )		≤0.1ppm	≤50ppb
Oygen+Argon (O <sub>2</sub> +Ar)		≤0.2ppm	≤10ppb
Nitrogen (N <sub>2</sub> )	≤1.0ppm	≤0.1ppm	≤10ppb
Water (H <sub>2</sub> O)	≤1.0ppm	≤0.2ppm	≤60ppb
Methane (CH <sub>4</sub> )	≤0.1ppm	≤0.1ppm	≤10ppb
Carbon Monoxide (CO)	≤1.0ppm	≤0.1ppm	≤10ppb
Carbon Dioxide (CO <sub>2</sub> )	≤1.0ppm	≤0.1ppm	≤50ppb
General Characteristics:	A colorless, non-flammable and liquefied gas with a strong smell.		
Health Hazards:	Toxic. Highly irritating to the mucous membranes and eyes. Contact with the skin causes severe		



# OTHER CHEMICALS

## CHEMICAL PROPERTIES (POCl<sub>3</sub>)

Inspection Parameter	Specification	Measuring Unit
POCl <sub>3</sub>	≥99.9999	%
Particle count (≥0.3um)	≤50	/ml
Color	≤5	APHA
Appearance	Colorless Transparent Liquid	/
Al	≤40	ppb
Ag	≤1	ppb
As	≤30	ppb
Au	≤1	ppb
Ba	≤20	ppb
Bi	≤10	ppb
Ca	≤30	ppb
Co	≤20	ppb
Cu	≤20	ppb
Cr	≤20	ppb
Fe	≤40	ppb
Ga	≤1	ppb
Hg	≤10	ppb
K	≤30	ppb
Li	≤10	ppb
Mg	≤20	ppb
Mn	≤30	ppb
Na	≤10	ppb
Ni	≤20	ppb
Nb	≤2	ppb
Pb	≤10	ppb
Sn	≤5	ppb
Sr	≤5	ppb
Ti	≤5	ppb
Zn	≤5	ppb

## MONO-TEXTURING ADDITIVE (TS53)

Inspection Parameter	Specification	Measuring Unit
Appearance	Brown liquid, slight precipitation	/
Color	Brown	/
PH	>10	/
Specific Density	1.01-1.03	g/mL
Sodium Hydroxide concentration	<0.5	%
Mn	≤1	ppm
Co	≤0.1	ppm
Ni	≤0.1	ppm
Fe	≤5	ppm
Pb	≤0.1	ppm
Mg	≤10	ppm
K	≤10000	ppm
Ag	≤0.1	ppm
Na	≤10000	ppm
Zn	≤0.1	ppm
Al	≤2	ppm
As	≤0.1	ppm
Cd	≤0.1	ppm
Ca	≤10	ppm
Cu	≤0.1	ppm

## MONO-TEXTURING ADDITIVE (TS55 V30)

Inspection Parameter	Specification	Measuring Unit
Appearance	Orange red liquid, a few precipitates	/
Surface tension	50.0 - 64.0	mN/m
Turbidity	≤100.0	NTU
Appearance of textured silicon wafer Corrosion of weight for 156mm x 156mm	Homogeneous texture, no comets, no stains, no flow mark, no black or white spots	/
DWC Monocrystalline silicon wafer	0.2 - 0.6	g
Average reflectance 400 - 1050nm	≤12.5	%

## ETHANOL (C<sub>2</sub>H<sub>5</sub>OH)

Inspection Parameter	Specification	Measuring Unit
C <sub>2</sub> H <sub>5</sub> OH	≥99.7	%
Acidity	≤0.04 or ≤0.002	mmolH+/100g or Wt%
Color	≤10	Hazen
Appearance	Colorless Transparent Liquid	/
Water Content	≤0.3	%

## TERPINEOL (C<sub>10</sub>H<sub>18</sub>O)

Inspection Parameter	Specification	Measuring Unit
Assay	99%	%
Reflective Index	1.4825-1.4855	N/A
Density	0.931-0.935	g/ml
Boiling Range (96%)deg C	214-224	N/A
Ethanol Dissolution Test	Qualified	N/A
PH	Qualified	N/A

## ISOPROPYL ALCOHOL (C<sub>3</sub>H<sub>8</sub>O)

Inspection Parameter	Specification	Measuring Unit
Appearance	Clear and free	N/A
Specific Gravity @25 deg	0.784 - 0.787	N/A
Water Content	0.6 Max	%
Assay	99.0 Min	%

## ETHYLENE GLYCOL (C<sub>2</sub>H<sub>6</sub>O<sub>2</sub>)

Inspection Parameter	Specification	Measuring Unit
Assay	≥99.9	%
Appearance	Colourless	/
Moisture	≤0.1	%
Colour	≤10	Hazen
Ash	≤0.002	%
Fe (Iron)	≤0.1	mg/kg

# PURITY IS OUR QUALITY

is our environmental  
commitment.



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