



The Andhra Sugars Limited.

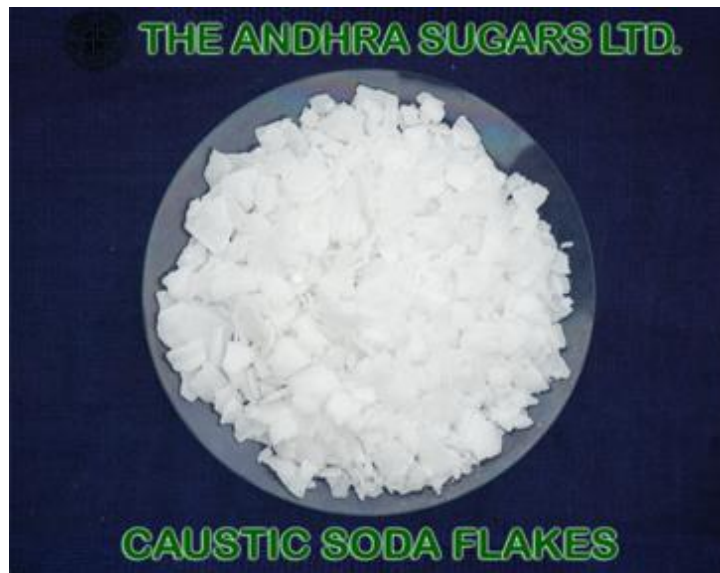
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CAUSTIC SODA FLAKES



S No.	Characteristics	Description
1.	Technical Name	Sodium Hydroxide
2.	Chemical Formula	NaOH
3.	Formation	Flakes/Lye
4.	CAS Registry No.	1310-73-2
5.	HSN	2815



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PRODUCT DESCRIPTION

Description	Caustic Potash Lye	Caustic Potash Flakes
Sodium hydroxide as NaOH	48.0 % (Min)	95.50 % Dry basis (Min.)
Carbonates as Na ₂ CO ₃	0.2 % (Max)	0.4 % (Max)
Chlorides as NaCl	0.015 % (Max)(150 ppm)	0.05 % (Max)(500 ppm)
Sulphates as Na ₂ SO ₄	0.002 % (Max)(20 ppm)	0.005 % (Max)(50 ppm)
Iron as Fe	0.001 % (Max)(10 ppm)	0.002 % (Max)(20 ppm)
Silicates as SiO ₂	0.002 % (Max)(20 ppm)	0.005 % (Max)(50 ppm)

Technology

Membrane Cell Technology by UHDE, Germany and Caustic Soda Flakes is manufactured by Technology of Buflovak LLC, USA

Exclusive features

- Mercury free
- Low iron content

Caution

Harmful to plant & animal tissues, corrosive in nature.



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Packing

C.S. Lye in Tankers and **C.S. Flakes** in 50 KG HDPE Bags with inner alkathene liner.

Applications

- Acid Neutralization
- Aluminum products
- Dyes & Pharmaceuticals
- Extraction of Petroleum products
- Extraction of Zinc
- Processing of Vegetable Oils
- Pulp & Paper
- Rayon
- Regeneration of Water Treatment Resins
- Rubber chemicals
- Soap Industries
- Sodium Salts

Advantages

- The A.S. Ltd., guarantees minimum 99.55 % purity of NaOH.
- Quality Control Lab is equipped with most modern instruments to analyze the product parameters.



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MATERIAL SAFETY DATA

Material Identification

Technical Name	SODIUM HYDROXIDE
Synonyms	CAUSTIC SODA
Chemical Classification	INORGANIC ALKALI
Chemical Formula	NaOH
Hazard Class	CORROSIVES-8
CAS Registry No.	1310-73-2
UN No.	1823
Hazchem Code	2R
Hazardous Waste Id No.	16

Product use

Manufacture of Rayon, Mercerized cotton, Soap, Pulp & paper, petroleum refining, Extraction of Zinc and Regeneration of Water Treatment Resins etc.

Hazardous Ingredients

Hazardous Ingredient	Sodium Hydroxide
Concentration	100%
CAS/UN No.	1310-73-3/1823
LC50	-
LD50	-



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Physical and Chemical properties

State	SOLID FLAKES
Molecular Weight	40
Vapour Pressure	-
Melting Point	318 ^o C
Colour	SNOW WHITE
Specific gravity	2.X 12
Vapour density	-
Boiling Point	1390 ^o C
Odour	Odourless
Water Solubility	SOLUBLE
pH	14
Freezing Point	-
Others	-

Fire/Explosion hazard data

Flammability	NON- FLAMMABLE
Auto Ignition temperature	Stable
Sensitivity to chemical impact	-
TDG Flammability	-
Explosive range	-
Flash Points	-
Hazardous Combustion Products	-
Sensitivity to static discharge	-

Reactivity Data

Chemical Stability	STABLE
Reactivity	Violently reacts with acids and organic halides When we attack metals such as Aluminum, Lead, Tin, and Zinc.
Incompatibility	Water, Acids, Formaldehyde.
Dangerous reaction products	Hydrogen



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Health hazard data

Route of entry	SKIN CONTACT, INGESTION, DUST INHALATION.
Effects on acute exposure	Eye, skin (corrosive) causes severe burns. Ingestion: Sore throat, vomiting, scar or perforation o digestive track
Sensitization to Material	-
Permissible limits	TLV(C) = 2MG/M ³
Lethal dose	LD50 (Rabbit) = 500 mg/kg.
Effects on Chronic exposure	Vapour: Destructive effect on human tissue Skin: Dermatitis
Synergistic Materials	-

Preventive Measures

Storage requirements	Packed in HDPE bags with alkathene liners. Indoor storage, clean and dry place.
Engineering controls	Raised place, ventilation should be proper.
Handling methods	Manual
Leak and spill handling	Material to be collected as heaps and kept covered until transfer into bags Residue to be washed with large amounts of water. Avoid enter into water sources.
Waste Disposal	Effluents shall be neutralized before disposal.
Personal protective equipment	goggle/face shield, hand gloves, gum boot, protective clothing
Special shipping information	Water reactive, Hygroscopic, deliquescent.



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Emergency/First-Aid measures

Fire extinguishment: -	
Special procedure: Water should not come in contact during fire fighting	
First – Aid Antidotes	
Skin: remove contaminated clothing. Thorough washing of affected area.	
Eyes: wash thoroughly with running water for at least for 15 minutes.	
Ingestion: rinse mouth, large intake of water, do not induce vomiting.	
Additional information: Provide drench water shower near caustic handling area. Dilution of caustic soda will generate heat. Care should be taken from liquid spatter.	
MANUFACTURER / SUPPLIER / CONSUMER DATA	Phones: 231597,231598,231599
THE ANDHRA SUGARS LIMITED Chemicals & Fertilizers Division. KOVVUR - 534 350, A.P.	Grams : CHEMICALS Fax: 08813 – 231218

Disclaimer

The information contained in this Material Safety Data Sheet is believed to be reliable but no representation, guarantee or warranties of any kind are made as its accuracy, suitability for a particular application or results to be obtained from them. It is however, ensured that the information contained in the material safety data sheet is relevant to the product manufactured/handled or sold as the case may be by us.



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ISO CERTIFICATES





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DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
176905-2015-HSO-IND-DNV

Initial certification date:
08, May, 2012

Valid:
08, May, 2015 - 07, May, 2018

This is to certify that the management system of

The Andhra Sugars Limited (Chemicals & Fertilisers Division)

Saggonda - 534 318, Gopalapuram Mandal, West Godavari District, Andhra Pradesh,
India

has been found to conform to the Occupational Health and Safety Management
System standard:

OHSAS 18001:2007

This certificate is valid for the following scope:

**Manufacture and sales of caustic soda lye / flakes, liquid chlorine,
hydrochloric acid, sodium hypochlorite, hydrogen gas, polyaluminium
chloride & sulphuric acid;**

Testing chlorine and hydrogen cylinders

Place and date:
Chennai, 23, April, 2015



For the issuing office:
DNV GL - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai, PIN - 600 016, India


Sivadasan Madiyath
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV GL Business Assurance India Private Limited, ROMA, No. 10, GST Road, Alandur, Chennai, PIN - 600 016, India.



The Andhra Sugars Limited.

DNV-GL

MANAGEMENT SYSTEM CERTIFICATE

Certificate No:
176854-2015-AQ-IND-RvA

Initial certification date:
08, May, 2012

Valid:
08, May, 2015 - 07, May, 2018

This is to certify that the management system of

The Andhra Sugars Limited (Chemicals & Fertilisers Division)

Saggonda - 534 318, Gopalapuram Mandal, West Godavari District, Andhra Pradesh, India

has been found to conform to the Quality Management System standard:
ISO 9001:2008

This certificate is valid for the following scope:

Manufacture and sales of caustic soda lye / flakes, liquid chlorine, hydrochloric acid, sodium hypochlorite, hydrogen gas, polyaluminium chloride & sulphuric acid;

Testing chlorine and hydrogen cylinders

Place and date:
Chennai, 23, April, 2015



The RvA is a signatory to the IAF MLA

For the issuing office:
DNV GL - Business Assurance
ROMA, No. 10, GST Road, Alandur,
Chennai, PIN - 600 016, India

Sivadasan Madiyath
Management Representative

Lack of fulfillment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV GL Business Assurance B.V., ZWOLSEWEG 1, 2994 LB, BARENORECHT, NETHERLANDS. TEL: +31102922689. www.dnvba.com



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ANALYSIS PROCEDURE

- (1) Sp. Gr., Temp: Refer chart to know the total alkalinity of NaOH concentration.
- (2) Determination of NaOH and Na₂CO₃: Weigh one empty dry weighing bottle with lid. Take about 2 to 3 grams of Flakes or 3 to 4 ml of Lye by means of graduated pipette into the weighing bottle and weigh again. Transfer the sample into a conical flask. Add about 50 ml distilled water and add 2 to 3 drops of Phenolphthalein indicator.

Weight of the sample = W grams

To know the approximate volume of 1 N HCl

(Titre value)

Percentage/4 = Volume of 1 N HCl for 1 gram sample.

Titrate it against standard 1 N Hydrochloric acid solution upto a little before the end point. Take this reading as A. Further titrate it against 0.1 N Hydrochloric acid solution till the pink colour just disappears. Take this reading as B. Then add 2 to 3 drops of Methyl Orange Indicator and continue titration against 0.1N Hydrochloric Acid to reddish orange colour. Take this reading as C.

Total Phenolphthalein T.V in 1 N = $A+B/10 = X$ ml

Methyl Orange T.V. in 1N = $C/10 = Y$ ml

Phenolphthalein end point = Na OH + $\frac{1}{2}$ Na₂ Co₃

Methyl Orange end point = $\frac{1}{2}$ Na₂ Co₃

NaOH% = $(x-y) \times 1 \text{ N} \times 40 \times 100/W \times 1000$

= $4(x-y)/W$

Na₂Co₃% = $2Y \times 1 \text{ N} \times 53 \times 100/ (W \times 1000)$

= $Y \times 10.6/W$



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- (3) Determination of Chlorides:- Weigh accurately about 10 grams of flakes or 20 grams of lye transfer it into a 250 ml conical flask, add about 50 ml distilled water, neutralize it with concentrated Nitric Acid and then add about 5 ml of the acid in excess. Cool to room temperature. Pipette out 10 ml of 0.05N Silver Nitrate solution into it. Add 5 ml of Nitrobenzene or Carbon Tetrachloride. Shake well. Add Ferric ammonium sulphate indicator solution. Titrate it against 0.05 N Potassium thiocyanate solution. The end point being appearance of permanent red-brown colour.

10 ml of Silver Nitrate = 10 ml of Potassium thiocyanate
(Blank expt.)

Silver Nitrate consumed = (10 - T.V.) ml
= A ml

Weight of the sample = W grams

Chloride (as NaCl) percent by mass
= $A \times 0.05 \times 58.5 \times 100 / (W \times 1000)$
= $A \times 0.2925 / W$

- (4) Determination of Chlorates and Perchlorates (as Sodium Chlorate): Weigh accurately about 50 grams of sample in a beaker and neutralize it with Sulphuric Acid (1:1) carefully after placing the beaker in cold water. Add 5 ml of the acid in excess and dilute to 250 ml. Transfer the contents of the beaker to a 500 ml conical flask. Add 25 ml of Ferrous Ammonium Sulphate solution. Close the flask with abunsen valve and boil the contents gently for 15 minutes. Allow the flask to cool to room temperature. After cooling, titrate the contents of the flask with 0.02 N Potassium Permoanganate solution slowly with stirring till a pink colour persists. note the volume as V2.

Run a blank by titrating 25 ml of Ferrous Ammonium Sulphate containing 5 ml of Sulphuric Acid and 200 ml water against 0.02N Potassium Permanganate, proceeding in the same way as that of test. Note the Volume as VI.



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Weight of the sample = W grams

$$\begin{aligned}\text{Chlorates (as NaClO}_3\text{) ppm} &= \{(VI-V2) \times N \times 17.75\}/M\} \times 1000 \\ &= \{(VI-V2) \times N \times 17750\}/M\end{aligned}$$

- (5) Determination of Iron: Weigh accurately about 10 grams of flakes or 20 grams of lye, transfer it into a 250 ml beaker, add about 50 ml distilled water. Neutralise it with concentrated Hydrochloric Acid and then add about 5 ml of the acid in excess. Add a pinch of Ammonium persulphate and boil well for 15 to 30 mnts (Chlorine is to be expelled). Cool to room temperature. Add 10 ml of 10% Potassium Thiocyanate solution. Red colour develops due to the formation of Ferricthiocyanate $\text{Fe}(\text{CNS})_3$. transfer the solution into a 100 ml Nessler Cylinder and make up to the mark.

This red colour is compared with red colour produced by known volume of standard Iron solution.

1 ml of Standard Iron solution = 0.1 mg of Fe

Volume of standard Iron solution used = V ml

Weight of the sample = W grams

$$\begin{aligned}\text{Iron (as Fe) PPM} &= (V \times 0.1 \times 1000)/W \\ &= (100 \times V)/W.\end{aligned}$$

- (6) Determination of Nickel: Weigh accurately about 10 grams of flakes, transfer to beaker, add about 20 ml distilled water, neutralize it with concentrated Hydrochloric Acid, cool to room temperature. Add Bromine water in drops to slight excess. Add 5 ml of 10% Sodium Citrate solution. Add one spoonful of solid Ammonium Chloride (up to this stage, Bromine colour should persist). Add 1:1 Ammonia solution in drops till Bromine colour vanishes. Add 5 ml of -: 3 :- 0.2 Sodium dimethyl glyoxime solution. If Nickel is present red-brown colour is developed. Transfer this solution into a 100 ml Nessler Cylinder and make upto the mark.



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This red –brown colour is compared with red-brown colour produced by known volume of standard Nickel solution.

1 ml of standard Nickel solution = 0.1 mg of Ni
Volume of standard Nickel solution used = V ml
Weight of sample = W grams

$$\begin{aligned}\text{Nickel (as Ni) ppm} &= (V \times 0.1 \times 1000)/W \\ &= (100 \times V)/W\end{aligned}$$



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TRANSPORT EMERGENCY CARDS

రవాణా అత్యవసర సమయాలలో సూచన పత్రము

సరుకు

కాస్టిక్ సోడా

తెల్లని నోడియం హైడ్రాకైడ్ ఫ్లైట్ పొలథీన్ సంగనులలో నింపబడినది

ప్రమాద స్వభావము

- ★ నీటిలో కరుగునపుడు అధిక ఉష్ణము జనించును.
- ★ కంటికి తగిలిన తీవ్రగాయమును.
- ★ శరీరమునకు తగిలిన మంట కలుగును. వుండ్లు పడవచ్చును.
- ★ లోనికి మ్రింగిన నోరు, జీర్ణకోశములందు గాయములగును.

రక్షణ పరికరములు

కండ్లజోడు, రబ్బరు చేతులు, గమ్బూటు, రక్షణ దున్నెలు

అత్యవసర చర్య

వెంటనే పోలీసు, అగ్నిమాపక కేంద్రాలకు తెలుపండి.

కారుట, చిందుట

- ★ ఎక్కువ పదార్థముపై నీటిని పోయరాదు
- ★ రసాయనం శరీరానికి తగుల నీయరాదు
- ★ కాలిన పదార్థమును ప్రోగు చేయవలెను
- ★ రక్షణ పరికరములు ధరించవలెను
- ★ పరిసరములను నీటితో శుభ్రపరచవలెను

అగ్ని ప్రమాదము

- ★ పదార్థమునకు మండే స్వభావము లేదు
- ★ మంటలనార్చునపుడు, ఈ పదార్థమునకు నీరు తగులకుండా జాగ్రత్త వహించవలెను.

ప్రథమ చికిత్స

- ★ కళ్ళు : పరిశుభ్రమైన నీటితో కనీసం పదిహేను నిముషాలు కడుగవలెను. అయింతుమెంట్లు వాడరాదు.
- ★ శరీరం : దుస్తులను తీసివేసి, ఎక్కువ నీటితో శరీర భాగాలను శుభ్రపరచు కొనవలయును
- ★ లోనికి మ్రింగితే నీలయినంత ఎక్కువ నీటిని త్రాగవలెను. వాంతులు చేయరాదు.
- ★ వెంటనే వైద్య సహాయం అందించాలి.



తయారుచేయువారు : **బి ఆంధ్రా సుగర్స్ లిమిటెడ్.**

ఎరువులు మరియు రసాయనముల విభాగము
సగ్గిండ - 534 318, ఫోన్ : 08811-253428
పోలీసు - 100, అగ్నిమాపక కేంద్రం - 101.

అదనపు సమాచారము : **బి ఆంధ్రా సుగర్స్ లిమిటెడ్**

ఎరువులు మరియు రసాయనముల విభాగము
కొవ్వూరు - 534 350,
ఫోన్ : 08813-231597, 231598, 231599

రహదారి రవాణాకు మాత్రమే వర్తింతును.

(తెలుగు)



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TRANSPORT EMERGENCY CARD (Road)		Hazard Class : 8
		Haz. Chem : 2R
		UN No. : 1823
Cargo :	CAUSTIC SODA FLAKES Na OH (Anhydrous Sodium hydroxide) Snow White Coloured flakes packed in HDPE bags with alkathyne liners	
Nature of hazard :	★ Water Soluble. generate excessive heat. ★ Eye contact cause severe injury. ★ Skin Contact Cause irritation, tissue damage ★ Ingestion cause injury to mouth and digestive tract.	
Protective device :	Goggles, Hand gloves, Gum Boot, Protective Clothing.	
EMERGENCY ACTION		Notify police and fire brigade immediately
	★ Don't use water on large Spills ★ Avoid Contact with the material	
SPILLAGE	★ Collect the spills as a heap ★ Use Protective equipment ★ Clean the area and flush with water	
FIRE	★ Non flammable material ★ Avoid water contact during the fighting	
FIRST AID	★ Eyes : Wash thoroughly with copious amounts of water atleast for 15 minutes. Don't apply any ointments. ★ Skin : Remove Contaminated clothing. Wash thoroughly the affected area ★ Swallowing : In take large quantities of water. Don't induce vomiting. ★ Get Medical attention immediately.	
	Manufactured By : THE ANDHRA SUGARS LTD., C&F Division, SAGGONDA Phone : 08811-253428 Police - 100, Fire - 101.	
	Additional information : THE ANDHRA SUGARS LTD., C&F Division, KOVVUR - 534 350 Phone : 08813 - 231597 to 231599	
Applies only during Road Transport.		