01 - IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

PRODUCT NAME: CAUSTIC SODA LIQUID AT 50%
SDS No.: 002
MANUFACTURER: Qatar Vinyl Company Ltd., QSC
P O Box 24440, Doha, State of Qatar

EMERGENCY TELEPHONE No.:
For Spill, Leak, Fire, Exposure or Accident
Call CHEMTRAC Day or Night
Within USA and Canada: 1-800-424-9300
Outside USA and Canada: +1-703-741-5970 and +1-703-527-3887
(collect calls accepted)

02 - COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL NAME OF THE SUBSTANCE: SODIUM HYDROXIDE 50%
AQUEOUS SOLUTION

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<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>Caustic soda</td>
<td>215-185-5</td>
<td>1310-73-2</td>
<td>49.0 – 51.0 % w/w</td>
<td>C; R35</td>
<td>Skin Corr. 1A; H314 Eye Dam. 1; H318 Met. Corr; H290</td>
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03 – HAZARDS IDENTIFICATION

SAFETY INFORMATION: PLEASE READ THIS SHEET CAREFULLY

HEALTH EFFECTS
Skin corrosion, 1A, H314
Risk of serious damage to eyes, 1, H318

PHYSICAL AND CHEMICAL HAZARDS
CORROSIVE to metals, 1, H290

SPECIFIC HAZARDS / EC
At high temperature: forms flammable and explosive hydrogen through

Name:
Sodium hydroxide; caustic soda

Hazard pictograms:

Signal Word: Danger
Hazard statements: Causes severe skin burns and eye damage.
May be corrosive to metals.
Precautionary statements:
Prevention: Do not breathe gas/mist/vapors/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
Response:
IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water / shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
Absorb spillage to prevent material damage.

OTHER HAZARDS
Potential health effects:
Acute exposure: Corrosive liquid
Inhalation: Severely irritating to respiratory system
Ingestion: Risk of perforation of digestive system

Physical and chemical hazards:
At high temperature: Forms flammable and explosive hydrogen through corrosion of metals.
Decomposition products: See chapter 10

Other:
Results of PBT and vPvB assessment : Not relevant

04 - FIRST AID MEASURES
GENERAL ADVICE
Under the shower:
Take off immediately all contaminated clothing, including shoes.

INHALATION
Inhalation of mists: Move to fresh air, Oxygen or artificial respiration if needed.
Keep under medical surveillance
In case of problems : Hospitalize

SKIN CONTACT
Wash immediately, abundantly and thoroughly with water
If possible, rinse with Boric Acid Solution 5%
Consult a doctor.
In case of extensive burns, hospitalize

EYE CONTACT
Remove particles remaining under the eyelids
Wash well open eyes immediately and abundantly with water for at least 15 min.
Consult an ophthalmologist immediately.

INGESTION
Do not induce vomiting, rinse mouth and lips with plenty of water if the subject is conscious, then hospitalize immediately.
Risk of Aerosol
For any intervention, wear appropriate breathing apparatus, Protective suit Impermeable Gloves, Safety Glasses/Goggles

05 - FIRE-FIGHTING MEASURES
EXTINGUISHING MEDIA
Suitable extinguishing media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SPECIFIC HAZARDS
At high temperature : Forms flammable and explosive hydrogen through corrosion of metals

AVICE FOR FIREFIGHTERS
Specific Methods: In case of fire nearby, remove exposed containers. Keep containers and surroundings cool with water spray.
Special protective actions for fire-fighters:
Wear self-contained breathing apparatus and protective suit.
06 - ACCIDENTAL RELEASE MEASURES
PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES
Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Prohibit contact with skin and eyes and Inhalation of vapors.

ENVIRONMENTAL PRECAUTIONS
Should not be released into the environment
Do not let the product enter into drains
Contain by damming with sand or inert earth (Do not use combustible materials)

METHODS FOR CLEANING UP
Recovery:
Wash with water and recover it. Absorb on sand. Wash the remainder with water.
Absorb on: Sand, Loam
Neutralization:
Neutralize with an acid (diluted solutions: Hydrochloric acid)
Neutralization is exothermic
Elimination: See chapter 13

07 - HANDLING AND STORAGE
PRECAUTIONS FOR SAFE HANDLING
Technical measures/Precautions
Storage and handling precautions applicable to products: viscous liquid Corrosive. At high vapor/fog concentrations: Provide appropriate Exhaust ventilation at machinery. Provide showers, eye-baths. Provide water supplies near the point of use. Provide self-contained breathing apparatus nearby

Safe handling advice
Avoid splashing when handling. For personal protection see section 8.

Hygiene measures
Prohibit contact with skin and eyes and inhalation of vapors. When using, do not eat, drink or smoke.
Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

CONDITION FOR SAFE STORAGE
Technical measures/Storage conditions
Provide a catch-tank and an impermeable corrosion-resistant floor with drainage to a neutralization tank within a dyke area. Store protected From moisture. Provide waterproof electrical equipment.
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Do not store below: 20 °C

Incompatible products
Acids,
Halogenated hydrocarbons

PACKAGING MATERIALS
RECOMMENDED
Ordinary steel
Stainless steel
Vulcanite coated steel
Epoxy resin lined tanks

To be avoided
Aluminum.
Copper and alloys
Zinc and alloys

08 - EXPOSURE CONTROLS / PERSONAL PROTECTION
PROTECTIVE PROVISIONS
Ensure sufficient air exchange and/or exhaust in work areas

CONTROL PARAMETERS
Product: CAUSTIC SODA SOLUTION AT 50%

Exposure limits
FRANCE 1993 : VME = 2 mg/m³
USA-ACGIH 2007 : Ceiling = 2 mg/m³ (maximum value)
EH40 WEL 2007; STEL 2 mg/m³

PERSONAL PROTECTION EQUIPMENT
Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment. Recommended Filter type: P2
Hand protection: Splash contact, intermittent and prolonged PVC or other plastic material gloves. Glove thickness: 1,2 mm
Eye/face protection: Safety glasses/goggles and face-mask (during discharge)
Skin and body protection:
At the workplace: Safety shoes, Combination with delayed penetration
Intervention at incident: Boots, overalls with hood, multi layered polyethylene

PHYSICAL AND CHEMICAL PROPERTIES
PHYSICAL STATE (20°C) liquid
FORM cloudy
COLOUR Colorless
ODOUR None
Olfactory Threshold No data available
pH pH 14
FREEZING POINT 12°C
BOILING POINT/RANGE 142 - 144 °C
FLASH POINT Not applicable
EVAPORATION RATE No data available
FLAMMABILITY Not applicable
VAPOUR PRESSURE (20°C) : 2 hPa (mbar)
VAPOUR DENSITY No data available
DENSITY liquid : (20°C) : 1520 kg/m³
SPECIFIC GRAVITY (water = 1) (liquid) (*) : (20°C) : 1.52 (*)
WATER SOLUBILITY 20°C : Completely soluble
PARTITION COEFFICIENT: N-octanol/water: Partition coefficient: n-octanol/water, Not relevant
MOLECULAR MASS : 40.01
AUTOIGNITION TEMPERATURE Not applicable
VISCOSITY, DYNAMIC Viscosity (20°C) : 78 mPa.s
Viscosity (40 °C) : 23 mPa.s (cP)

OTHER DATA
Solubility in other solvent Water soluble solvents
Henry constant Not applicable
Explosive properties Not relevant (due to chemical structure)
Oxidizing properties Not relevant (due to chemical structure)

STABILITY AND REACTIVITY
The product is stable under normal handling and storage conditions.
(To maintain the technical properties of the product). Store protected from moisture.

INCOMPATIBLE MATERIALS TO AVOID
Water : Acids (Neutralization is exothermic)
Metals : Zinc-Aluminum-Copper (formation of : Hydrogen)
Alkaline metals : alkaline earth metals-exothermic reaction, formation of Hydrogen
Acetaldehyde - Acrolein - Acrylonitrile - Allyl alcohol (Violent polymerization)
Halogenated hydrocarbon-Maleic anhydride-Bromine-Nitro paraffin
Nitro aromatics-Oleums-Tetrahydronifuran (Violent, even explosive, reaction)

HAZARDOUS DECOMPOSITION PRODUCTS
At high temperature : Forms flammable and explosive hydrogen through corrosion of metals
11 - TOXICOLOGICAL INFORMATION

TOXICOLOGICA INFORMATION

Acute toxicity

Ingestion:
Causes severe digestive tract burns, Risk of perforation of digestive system, State of shock

LOCAL EFFECTS (Corrosion /Irritation /Serious eye damage)

Skin Contact

Causes severe burns. Very corrosive to skin
Recovery slow, Serious lesions with possible after-effects if not washed immediately. Scars may be retraction
Diluted solutions: Dermatitis possible through repeated contact

Eye Contact

Corrosive to eyes
Serious lesions with possible after-effects if not washed immediately, Affects all the tissues of the eye. Risk of loss of sight.

RESPIRATORY or SKIN SESITIZATION

Inhalation
No data available

Skin Contact
Not a skin sensitizer
Negative epicutaneous tests reported in man

CMR EFFECTS

Mutagenicity
Results from in vitro and in vivo tests do not lead to considering the product as genotoxic.

In vitro
Ames test: negative
In vitro test for chromosomal abnormalities on CHO cells: positive
DNA repair test on rats hepatocytes: negative

In vivo
Micronucleus test in vivo mouse: negative
Tests for chromosome aberrations in vivo in germ cells: negative

Carcinogenicity
Based on the available data, the substance is not suspected of having carcinogenic potential

Reproductive toxicity
Fertility: Based on the available data, the substance is not suspected of having reprotoxic potential.

SPECIFIC TARGET ORGAN TOXICITY

Single exposure
Inhalation
Corrosive to respiratory system
Inhalation of mists, aerosol

Repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Local effects due to an irritant effect

ASPIRATION HAZARDS
No data available

12 - ECOLOGICAL INFORMATION

ACUTE TOXICITY

Fish
LC50, 96 h (Freshwater fish) : 35 - 139 mg/l

Aquatic invertebrates
LC50 : 30 - 1.000 mg/l product not neutralized

Aquatic plants
No relevant data for technical reasons.

Microorganisms
No data available

PERSISTENCE & DEGRADABILITY

Biodegradation (In water):
Formation of salts in solution in the environment, not applicable

Photodegradation (In air):
Overall half-life time: 13 s, Neutralization by atmospheric carbon dioxide

BIOACCUMULATION POTENTIAL

Bioaccumulation:
Not applicable
Partition coefficient: n-octanol/water, Not relevant

MOBILITY IN SOIL - Distribution among environmental compartments

Distribution among environmental compartments: not applicable

Henry constant: not applicable,

Absorption / desorption: Non absorbable

RESULTS OF PBT AND vPvB assessment:
Not relevant
13 - DISPOSAL CONSIDERATIONS

DISPOSAL OF PRODUCT: Neutralize with an acid (diluted solutions: Hydrochloric acid)
DISPOSAL OF PACKAGING: Clean container with water
Recover waste water for treatment later

14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: SODIUM HYDROXIDE SOLUTION
UN Number: 1824
LABEL:

ADR: Class: 8; Label: 8; Packing Group II; Environmentally hazardous: no;
ADNR: Class: 8; Label: 8; Packing Group II; Environmentally hazardous: no;
RID: Class: 8; Label: 8; Packing Group II; Environmentally hazardous: no;
IMDG: Class: 8; Label: 8; Packing Group II; Environmentally hazardous: no;
EmS Number: F-A, S-B
IATA Cargo: Class: 8; Label: 8; Packing Group II; Environmentally hazardous: no;
IATA Passenger: Class: 8; Label: 8; Packing Group II; Environmentally hazardous: no;

15 - REGULATORY INFORMATION

EC CLASSIFICATION / LABELLING: (EC) No 1272/2008 (GHS)
ADDITIONAL REGULATIONS (EU): Hazardous Waste Regulations 2005 Applies
Young workers 94/33/EC Banned and/or restricted
UK REGULATION Chip3: Chemical (Hazard Information and Packaging for Supply) Regulations 2002

INVENTORIES
EINECS: Conforms to
TSCA: Conforms to
AICS: Conforms to
DSL: All components of this product are on the Canadian DSL list.
ENCS (JP): Conforms to
KECI (KR): Conforms to
PICCS (PH): Conforms to
IECSC (CN): Conforms to

REACH Registration Status: Registered

16 - OTHER INFORMATION

Full text of R, H, EUH-phrases referred to under sections 2 and 3
R35 Causes severe burns.
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

RECOMMENDED USES
Chemical Industry
Textiles
Metallurgy (Aluminum)
Paper making
Soap industry
Detergents
Fiche toxicologique INRS : N° 20 : Soude Caustique et Solutions Aqueuses

BIBLIOGRAPHY REFERENCES

This information applies to the PRODUCT AS SUCH and conforming to specifications of QVC.
In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear.
The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. However the revision of some data is in progress.

Users are advised of possible additional hazards when the product is used in applications for which it was not intended.

This sheet shall only be used and reproduced for prevention and security purposes.

The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive.

It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product.

It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.