

The Chemical Chronical Assignment

Example :

- **Chemical reactions involving sodium chloride**

Finding Legitimate Internet Sites of Chemical Reactions Using Google

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- } url's that end with these are legitimate sites

Example : sodium chloride



chemical reactions of sodium chloride

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Sodium chloride - Wikipedia, the free encyclopedia

https://en.wikipedia.org/wiki/Sodium_chloride

This article is about sodium chloride as a chemical compound. provides the world with chlorine and sodium hydroxide according to the chemical equation.
Chemistry - Occurrence - Production - Uses

1

sodium chloride | ClNa - PubChem

[pubchem.ncbi.nlm.nih.gov](https://pubchem.ncbi.nlm.nih.gov/compound/sodium-chloride) > compound
sodium chloride | ClNa | CID 5234 - structure, chemical names, physical and chemical properties, classification, patents, literature, biological activities, ...

.gov

Chemical Equations - Chemistry Explained

www.chemistryexplained.com > Di-Fa

Chemical reactions convert reactants to products, whose properties differ ... A reaction of sodium with chlorine to produce sodium chloride is an example of a ...

People also ask

What happens when sodium reacts with chlorine?

What are the elements in sodium chloride?

How does a bond form between sodium and chlorine in sodium chloride?

How is the compound sodium chloride formed?

Sodium and Chlorine Reaction - The making of table salt ...



www.youtube.com/watch?v=oZdQJl-UwYs
Jan 15, 2014 - Uploaded by MrGrodskiChemistry
An Erylmeyer flask is filled will chlorine gas by the reaction of hydrochloric acid ... reaction that produces a white smoke full of NaCl or sodium chloride dust. dude can you make a chemical reaction like this but converting ...

2

Reactions of sodium chloride (s) with sulfur dioxide (g) and ...

pubs.acs.org/doi/abs/10.1021/j100234a022
by AB Anderson - 1983 - Related articles

.org



chemical reactions of sodium chloride

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Page 2 of about 2,670,000 results (0.60 seconds)

3

Demonstrations - Sodium + Chlorine - Angelo State University

<https://www.angelo.edu/faculty/kboudrea/> /sodium.../sodium_chlorine.h...
Sodium and chlorine react with each other, however, to produce a substance that is familiar to almost everyone in the world: sodium chloride, or table salt: 2Na(s) ...
Chemical Demonstrations: A Handbook for Teachers of Chemistry, Volume 1.

.edu

4

Silver Nitrate and Sodium Chloride - Chemistry Learning ...

www.chem.uiuc.edu/clcwebsite/AgCl.html
The Department of Chemistry at the University of Illinois. The Chemistry learning center. The Reaction of Silver Nitrate with Sodium Chloride. Strips of aluminum ...

.edu

Sodium Chloride - Garden and Plate

gardenandplate.com/sodiumchloride.html
When sodium and chlorine atoms come together to form sodium chloride ... We examine the chemical properties of sodium in its reactive (toxic) state here, and ...

5

CHEMICAL REACTIONS

www.ric.edu/faculty/ptiskus/reactions/
A chemical reaction is the change of a substance into a new one that has a ... The product of the reaction is the ionic compound sodium chloride, which is the ...

.edu

Sodium chloride | 7647-14-5 - Chemical Book

www.chemicalbook.com > ChemicalBook > CAS DataBase List
Visit ChemicalBook To find more Sodium chloride(7647-14-5) information like chemical properties, Structure, melting point, boiling point, density, molecular formula ...

6

SODIUM CHLORIDE | CAMEO Chemicals | NOAA

cameochemicals.noaa.gov/chemical/21014
Chemical Identifiers | Hazards | Response Recommendations | Physical Properties | Regulatory Information | Alternate Chemical Names ...

.gov

Sodium (Na) - Chemical properties, Health and ... - Lenntech

www.lenntech.com > Periodic table > Elements
Physical data, chemical properties, health and environmental effects.

2

I picked #2 because a chemical reaction was shown

<http://pubs.acs.org/doi/abs/10.1021/j100234a022>

The screenshot shows the ACS Publications website interface. At the top, there is a navigation bar with 'Log in', 'Register', and 'Cart' buttons. Below this is a blue banner with the text 'Publish in the journal you want, how you want. Choose ACS open access options.' and logos for 'ACS AuthorChoice' and 'ACS Author Rewards'. The main header features the 'THE JOURNAL OF PHYSICAL CHEMISTRY' logo and a search bar with options for 'Search', 'Citation', 'DOI', 'Subject', and 'Advanced Search'. A red arrow points from the URL in the address bar to the 'Pre-1997' tab in the journal navigation menu.

Research Article

Reactions of sodium chloride(s) with sulfur dioxide(g) and molecular oxygen(g) to form sodium sulfate(s). A charge-transfer reaction

Alfred B. Anderson, N. C. Debnath

J. Phys. Chem., 1983, 87 (11), pp 1938–1941
DOI: 10.1021/j100234a022
Publication Date: May 1983

ACS Legacy Archives

Note: In lieu of an abstract, this is the article's first page.

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1938 *J. Phys. Chem.* 1983, 87, 1938–1941

Reaction of NaCl(s) with SO₂(g) and O₂(g) To Form Na₂SO₄(s). A Charge-Transfer Reaction

Alfred B. Anderson* and N. C. Debnath

Chemistry Department, Case Western Reserve University, Cleveland, Ohio 44106 (Received: August 12, 1982)

We find, using an atom superposition and electron delocalization molecular orbital (ASED MO) theory, that the driving force for the reaction $O_2(g) + SO_2(g) + 2NaCl(s) \rightarrow Na_2SO_4(s) + Cl_2(g)$ is electron transfer from chloride ions to sulfate ions as they begin to form. The lowest energy pathway is catalyzed by SO₃ which adds to an activated O₂SO₂ molecular intermediate, yielding sulfate ions and SO₂. Our results support the experimentally observed first-order dependence on SO₂ pressure, and the low barrier for this exothermic reaction. We find that all gas-phase species bond weakly to the NaCl(s) surface and SO₂ bonds most strongly by donation from the 5s, highest filled orbital to the empty Na 3s band.

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The article gives the following reaction

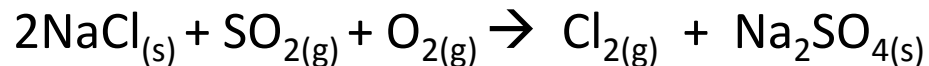
Reaction of NaCl(s) with SO₂(g) and O₂(g) To Form Na₂SO₄(s). A Charge-Transfer Reaction

Success Criteria:

Word Equation:

Sodium chloride + sulfur dioxide + oxygen → sodium sulfate

Chemical Equation: Balance your equation



Safety Issues →

Environmental Issues

CSE

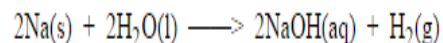
VIRTUAL DATA BASE

← → C https://www.angelo.edu/faculty/kboudrea/demos/sodium_chlorine/sodium_chlorine.htm



Sodium is a silver-colored metal which is soft enough to cut with a knife. It is an extremely reactive metal, and is always found naturally in ionic compounds, not in its pure metallic form. Pure sodium metal reacts violently (and sometimes explosively) with water, producing sodium hydroxide, hydrogen gas, and heat:

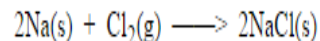
Reaction 1



Chlorine is a poisonous, yellow-green gas, with a very sharp odor, and was used in gas warfare during World War I.

Sodium and chlorine react with each other, however, to produce a substance that is familiar to almost everyone in the world: **sodium chloride**, or table salt:

Reaction 2



It is easy to see why this reaction takes place so readily when we look at it on an atomic level: sodium has one electron in its outermost (valence) shell, while chlorine has seven electrons in its valence shell. When a sodium atom transfers an electron to a chlorine atom, forming a sodium cation (Na^+) and a chloride anion (Cl^-), both ions have complete valence shells, and are energetically more stable.

The reaction is extremely exothermic, producing a bright yellow light and a great deal of heat energy.

According to the success criteria. Which reaction will you pick? Reaction 1 or reaction 2?

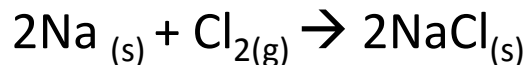
Reaction 2 is the correct one because it involves sodium chloride.

Success Criteria:

Word Equation:

sodium + chlorine → sodium chloride

Chemical Equation:



What could be a fun story about sodium chloride?

This is an “a salt” →

- Somebody was walking home from school and had stolen some sodium from the GRCI Chemistry Department. A rival student from CHCI had a balloon filled with chlorine gas and threw it at the GRCI student who tried to block the impact with a piece of sodium.



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- Purdue OWL Chicago Style Guide

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- Purdue OWL APA Style Guide

MLA

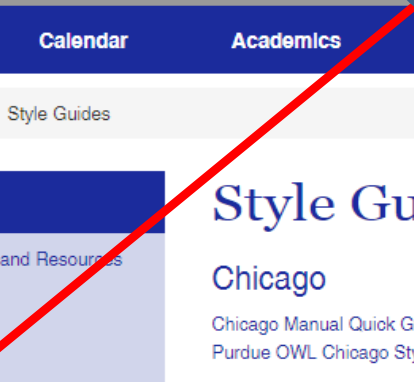
- Purdue OWL MLA Style Guide

Sciences

-  Dalhousie University CSE Citation Guide
- Purdue OWL APA Style Guide

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Anderson A.B, Debnath N.C. 1983. Reactions of sodium chloride(s) with sulfur dioxide(g)
and molecular oxygen(g) to form sodium sulfate(s). A charge-transfer reaction. The
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***The Journal of Physical Chemistry* 1983 87 (11), 1938-1941**

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CSE Reference

- https://www.angelo.edu/faculty/kboudrea/demos/sodium_chlorine/sodium_chlorine.htm
- <http://www.chem.uiuc.edu/clcwebsite/AgCl.html>

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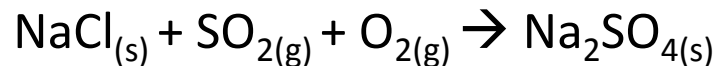
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https://owl.english.purdue.edu/media/pdf/20090212013008_560.pdf