

3.091 Fall Term 2009

Homework #5b

October 8 (to be **submitted** October 15)

This homework assignment is to be **typed, printed out, and TURNED IN** at recitation next week (Thursday Oct 15). It will be worth 5 points.

To complete this assignment, **visit the library web page for 3.091**, found at <http://libraries.mit.edu/3.091> or through the link on the 3.091 course page. Completing the assignment should not take longer than 30 minutes. If it is taking longer than 30 minutes to complete, please ask a librarian or your TA for help.

In 1995 Mario J. Molina and F. Sherwood Rowland were awarded the Nobel Prize in Chemistry for "their work in atmospheric chemistry, particularly concerning the formation and decomposition of ozone."

1. Cite the published article (not meeting abstract) in which they announced this discovery to the world. Please provide a complete citation in ACS Format.

Example: Author, A. B.; Author, C. D. Article Title. *Journal Title* Year, volume, (issue), page number range.

ANSWER:

Molina, M. J.; Rowland, F. S. Stratospheric Sink for Chlorofluoromethanes- Chlorine Atomic-Catalysed Destruction of Ozone. *Nature* **1974**, 249, (5460), 810-812.

Also accepted since this is how it appeared in *Nature*: Molina, M. J.; Rowland, F. S. Stratospheric Sink for Chlorofluoromethanes: Chlorine Atomic-catalysed Destruction of Ozone. *Nature* **1974**, 249, (5460), 810-812.

HOW TO DO IT:

To begin, I went to <http://nobelprize.org> and found the entry on Molina and Rowland's prize. The press release for this prize mentioned the article, published in *Nature* in 1974. I then went to Web of Science (<http://libraries.mit.edu/get/webofsci>) since it is a great general database to begin a literature search. I did a General Search, and searched for author Molina MJ and publication year 1974. I browsed the results for the paper published in *Nature*, then used the format example to properly cite the article

Molina, M. J.; Rowland, F. S., Stratospheric Sink for Chlorofluoromethanes - Chlorine Atomic-Catalysed Destruction of Ozone. *Nature* **1974**, 249, (5460), 810-812.

2. Look at the article found in question 1.

- a. What is the earliest (oldest date) journal article cited by the authors?
- b. Do the MIT Libraries own the journal volume cited in part 2a.? If yes, in which library is it located, and what is its call number?
- c. Is the article found in part a available online through the MIT Libraries for the year it was published?

NOTE: You do not have to go to the library and physically locate this journal to answer the question.

ANSWER:

a. Marsh, D., and Heicklen, J., *J. Phys. Chem.*, 69, 4410 (1965).

Or

Marsh, D.; Heicklen, J., Photolysis of Fluorotrichloromethane. *J. Phys. Chem.* 1965, 69, (12), 4410-4412.

NOTE: if students have this answer: Hudlicky, M., *Chemistry of Organic Fluorine Compounds*, 340 (MacMillan, New York, 1962). That is WRONG. The question asked for the earliest JOURNAL ARTICLE and this citation is for a book.

b. Yes, Library Storage Annex, QD.J862

c. Yes, online access for this year.

HOW TO DO IT:

I used the SFX link in Web Of Science (when I found the citation) to see if there was online access to this article. And there is! I looked through the references of the article. I found a reference from 1962, but it was for a book. The earliest journal article referenced is:

Marsh, D., and Heicklen, J., *J. phys. Chem.*, **69**, 4410 (1965).

I then searched Barton (<http://libraries.mit.edu/barton>) for the journal abbreviation j phys chem. Yes, this journal is owned by the Library Storage Annex in print and microfilm. Call number QD.J862. According to the record in Barton (<http://library.mit.edu:80/item/000293663>), this journal is available online from 1952-1996, so yes, it is available online for 1965.

3. How many times has the original Nobel Prize winning article by Molina and Rowland been correctly cited by others?

ANSWER:

1899

HOW TO DO IT:

I went back into Web Of Science and viewed the record that I had found in for part 1. On the full record screen, there is a link for Times Cited.

4. How many of the articles that correctly cited the original Nobel Prize winning article by Molina and Rowland were REVIEW ARTICLES?

ANSWER:

183

HOW TO DO IT:

I clicked the Times Cited link to view all 1899 citations that cited the paper by Molina and Rowland. On the results screen, I refined my results by Document Types and selected Review. 183 articles were review articles.