

Read : Application for determination dt.17.06.2013 (filed on dt.20.06.2013) by M/s. Convertex Gases Private Limited holder of TIN-27660688576V.

Heard : Sh. Rajat Talati, Chartered Accountant alongwith Sh. Satish Shetye, General Manager (Technical).

PROCEEDINGS

(under section-56(1)(e) of the Maharashtra Value Added Tax Act, 2002)

No.DDQ-11/2013/Adm-6/32/B- 4

Mumbai, dt. 30/3/2016

The applicant M/s. Convertex Gases Pvt. Ltd., situated at 621, Marathon Max, Mulund Link Road, Mulund (West), Mumbai-400080, requests for determination of the rate of tax on the following product which comprises Ethylene oxide and carbon dioxide and described by the applicant as ethylene oxide based gas mixture called as 'Ethylene Oxide' :

Bill No. & dt.	Description
001 dt.05.03.2012	Stericon 90 (90% EO + 10% CO2)
00762 dt.06.03.2012	Stericon 90 (90% EO + 10% CO2)
00123 dt.06.06.2013	Stericon 90 (13% EO + 87% CO2)
049 dt.01.06.2013	Stericon 10 (10% EO + 90% CO2)
00237 dt.01.06.2013	Stericon 10 (10% EO + 90% CO2)

02. FACTS AND CONTENTION AS PER THE APPLICANT

The application is reproduced verbatim thus :

"1. Your applicant M/s Convertex Gases Pvt Ltd is a registered dealer under MVAT Act and CST Act in the state of Maharashtra. The company deals in the ethylene oxide based gas mixture covered by Schedule C entry 54 taxable @ 5%.

2. The issue has arisen as to the rate of tax applicable on the ethylene oxide based gas mixture called as 'Ethylene Oxide'.

3. The 'Ethylene Oxide based mixture' consists of 2 ingredients:

a. Ethylene Oxide gas and

b. Carbon Dioxide in the form of Gas. The excise tariff entries of the ingredients are as follows:

Sr. No.	Ingredients	Excise Tariff Entry
a.	Ethylene Oxide	29101000
b.	Carbon Dioxide	28112910

Both ingredients are taxable @ 5% as the same are covered under the Notification issued in respect of industrial inputs under Schedule C Entry 54 of MVAT Act, 2002.

Submissions;

1. Ethylene oxide and carbon dioxide are the components of the ethylene oxide based gas mixture. For an industrial input to be taxable at the rate of 5% under MVAT Act, 2002 the input should be covered under the relevant excise tariff entry and also the description of the input should match with the description as given in the Notification in respect of Industrial Inputs issued under MVAT Act, 2002.

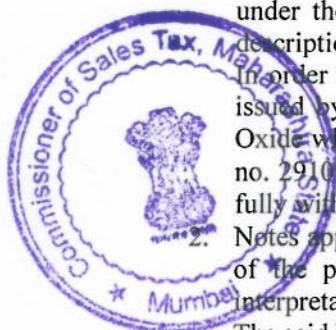
In order to support the above explanation we would like to rely on the Certificate dated 09.07.2012 issued by the Superintendent of Central Excise, Range V, Kalyan II, Mandal stating that "Ethylene Oxide which is the main component of the product of gas mixture is falling under chapter subheading no. 29101000 of the Central Excise Tariff Act, 1985". The chapter subheading no. 29101000 matches fully with the corresponding description as given in Notification issued u/e C-54 at Sr. no 89.

Notes appended to the Notification issued u/e C-54 provides that the principles/rules for interpretation of the provisions of the Central Excise Tariff Act, 1985 would apply for the purposes of the interpretation of the Notification as well.

The said Note 3 read as under:

"Where the description against any heading or sub heading or as the case may be, tariff items, matches fully with the corresponding description in the Central Excise Tariff under that heading or sub-heading or as the case may be, tariff item will be covered by the scope of this notification".

3. In view of the said Note 3, a reference can be made to the Rule 3(b) of General Rules for interpretation of the Schedule to the Central Excise Tariff Act, 1985 which read as follows:



"(a) the heading which provides the most specific description shall be preferred to headings providing a more general description. However, when two or more headings each refer to part only of the materials or substances contained in mixed or composite goods or to part only of the items in a set put up for retail sale, those headings are to be regarded as equally specific in relation to those goods, even if one of them gives a more complete or precise description of the goods."

"(b) mixtures, composite goods consisting of different materials or made up of different components, and goods put up in sets for retail sale, which cannot be classified by reference to (a), shall be classified as if they consisted of the material or component which gives them their essential character, insofar as this criterion is applicable."

4. Para 1 as above makes one infer that the 'ethylene oxide based gas mixture' gets covered by the relevant Excise Tariff Entry Act, 1985. Para 2 as above decipher that the description of the 'ethylene oxide based gas mixture' also matches with the description as given in the Notification in respect of Industrial Inputs issued under MVAT Act, 2002. Para 3 above substantiates Para 2. In view of the above one can conclude that the ethylene oxide based gas mixture is covered by the Notification issued u/e. C-54 and hence taxable @ 5% under MVAT Act, 2002.
5. Moreover, your applicant has also taken the clarification about the classification of Ethylene Oxide under Central Excise Tariff from Mr. Vijay S. Rane, Advocate H.C Mumbai vide letter dated. 04.01.2013. In the said letter, he has highlighted that "The product containing the mixture of other gases with Ethylene Oxide would also fall under the same chapter subheading till the predominance of 'Ethylene Oxide' is maintained in that particular mixture".
- I. Your applicant has acknowledged the letter issued by the Deputy Commissioner of Sales Tax on 08/04/2013 which states that your applicant has not filed any new documentary evidence in respect of the classification of the product. Following are the sequence of events leading to the issuance of the letter dt.08/04/2013 from the office of he Dy. Comm. Of S.T. (L.M.).
 - A. Your applicant filed a letter to the Deputy Commissioner of Sales Tax dated 24.02.2012 and on 02.03.2012 seeking clarification regarding the rate of tax applicable on the 'ethylene oxide based gas mixture'. A letter was filed on 11.07.2012 explaining the classification of the impugned product with respect to the excise tariff entry under Central Excise Tariff Act, 1985.
Your applicant received a reply to the same through letters dated 21.06.2012 and on 20.11.2012 from the Deputy Commissioner of Sales Tax stating that it should be taxable at the rate of 12.5%.
 - B. In response to the letters received from the deputy commissioner on 21.06.2012 and on 20.11.2012 your applicant has further submitted a letter on 06.02.2013 explaining the reasons as to why the impugned product should be taxable at 5% under MVAT Act, 2002 along with all the necessary documents and certificates.
- II. Having made the further submission on 06.02.2013 your applicant has received a letter from the deputy commissioner of sales tax on 08.04.2013 stating that the applicant has not furnished any new documentary evidence (the applicant were not asked to file any new documents). Also the letter has been held good and has been filed at the office of your applicant, without providing any opportunity for hearing. In view of the above the present Application of DDQ is filed."

02 HEARING

Sh. Rajat Talati, Chartered Accountant, attended alongwith Sh. Satish Shetye, General Manager, Technical. The contention as put forth during hearing is thus :

- The applicant relied on the clarification given by the Excise Superintendent.

To this, it was pointed to the applicant that the clarification says that Ethylene Oxide (ETO) falls in 29101000 and not the product which is a mixture of Ethylene Oxide and Carbon Dioxide.

To this it was argued that the letter addressed to the Superintendent, Excise based on which the Superintendent had issued clarification and confirmation clearly mentions that the classification advice was sought for Ethylene Oxide based gas mixtures. The Superintendent has referred to the letter and has further mentioned that the certificate is for the Ethylene Oxide which is the main component of the product of gas mixture which was referred to categorically for advice.

- The Harmonized Commodity Description and Coding System Explanatory (HSN) Notes which speak about only 'separately chemically defined compounds' being falling in Chapter 29 were pointed to the applicant. Hence it was queried whether the impugned product, which contains ethylene oxide and carbon dioxide, could be regarded as a separate chemically defined compound.

In reply thereto, Mr. Talathi stated that the impugned product comprises of 2 ingredients a) ethylene oxide (C₂H₄O, Excise Entry 29101000] & b) Carbon dioxide [CO₂, Excise Entry 28112910]. The mixture of the two chemicals is the issue for determination. As mentioned in the Technical Note, it is an inert gas i.e. chemicals which do not react with ethylene oxide in the mixture. Thus, one will have to refer to rule 3(b) of General Rules for interpretation of the Schedule to Central Excise Tariff Act which states that the classification under the Central Excise is based on the material which gives essential character to the product. In the given case, ETO gives the essential character to the gas mixture. Moreover, ETO in the mixture continues to have the same chemical name C₂H₄O even in the mixture. He also highlighted that ETO is hazardous and flammable chemical and is neither suitable nor practical to handle ETO by the technicians at the floor level. To enable the ETO to spread in the sterilization chamber (depending on the nature of the product, its packaging, etc. required to be sterilized) controlled doses of ETO using the CO₂ as carrier is used.

- Mr. Talathi further submitted that both ETO and CO₂ are covered by schedule entry C-54 and hence the mixture of these two gases which are also having industrial applications only be also classified as industrial inputs.

A written submission dt.29.12.2015 was tendered which is reproduced verbatim thus :

“Your applicant M/s. Convertex Gases Pvt Ltd has filed application u/s.56(1) requesting your good offices to pass an order about the applicable rate of tax on the ethylene oxide based gas mixture called as 'Ethylene Oxide'.

As mentioned in the application dt.17.6.2013, the following particulars are relevant in the matter.

1. The 'Ethylene Oxide based mixture' consists of 2 ingredients:

- a. Ethylene Oxide gas and
- b. Carbon Dioxide in the form of Gas.

The excise tariff entries of the ingredients are as follows:

Sr. No.	Ingredients	Excise Tariff Entry
a.	Ethylene Oxide	29101000
b.	Carbon Dioxide	28112910

Both ingredients are taxable @5% as the same are covered under the Notification issued in respect of industrial inputs under Schedule C Entry 54 of MVAT Act, 2002.

2. Ethylene oxide and carbon dioxide are the components of the ethylene oxide based gas mixture. For an industrial input to be taxable at the rate of 5% under MVAT Act, 2002 the input should be covered under the relevant excise tariff entry and also the description of the input should match with the description as given in the Notification in respect of Industrial Inputs issued under MVAT Act, 2002. In the present case, the ethylene oxide based gas mixture called as 'Ethylene Oxide' is cleared under the excise chapter 29101000.

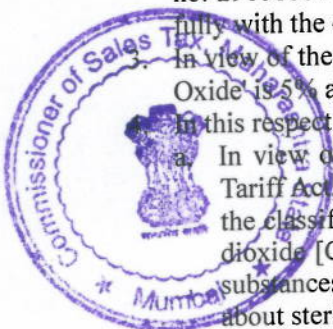
In order to support the above explanation we would like to rely on the Certificate dated 09.07.2012 issued by the Superintendent of Central Excise, Range V, Kalyan II, Mandal stating that "Ethylene Oxide which is the main component of the product of gas mixture is falling under chapter subheading no. 29101000 of the Central Excise Tariff Act, 1985". The chapter subheading no. 29101000 matches fully with the corresponding description as given in Notification issued u/e C-54 at Sr. no.89.

In view of the above rate of tax applicable on the ethylene oxide based gas mixture called as 'Ethylene Oxide' is 5% as the same is covered by notification issued under schedule C-54 [notification sr. no.89].

In this respect your applicant rely on the following amongst other grounds.

- a. In view of Rule 3(b) of General Rules for interpretation of the Schedule to the Central Excise Tariff Act, 1985, Ethylene Oxide being the material which gives essential character to the product, the classification under the excise is to be based on this criterion. It may be noted that the carbon dioxide [CO₂] is mixed with ethylene oxide [EO] as an inert [not reacting chemically with other substances] gas to facilitate the transportation and is application. [Please refer to technical note about sterilization with a used of EO attached herewith].

- b. The Superintendent Central Excise vide letter dt. 9.7.12 has clarified that the gas mixture [the impugned product] has Etylene Oxide as the main component of gas mixture and therefore it follows under the chapter heading 29101000 of the Central Excise Tariff Act, 1985. The returns under the Central Excise is also accordingly filed by your applicant by classifying the goods under chapter 29101000. Moreover, your applicant is provided with an opinion 4.1.13 from a leading advocate Mr. Vijay S. Rane, Advocate opining that the product containing mixture of other gases with EO would also fall under the same chapter subheading till the predominance of 'Ethylene Oxide' is maintained in that particular mixture.



5. Ethylene oxide is hazardous chemical and requires special attention and safety measures for manufacture, supply and storage of the same. Hence, Licenses are issued under the Gas Cylinder Rule, 2004 by the Chief Controller for filling up storage of EO based gas mixture. M/s. Reliance Industries Ltd, the leading manufacturer of EO has issued material safety data sheet wherein the said RIL has identified it as hazardous substance.
6. As discussed in the technical note attached herewith EO, per say is not suitable use thereof in sterilization process. Besides being highly sensitive and inflammable hazardous substance, EO cannot be used directly in the sterilization process. Therefore, the strength of the EO is to be reduced to make it safe and user friendly for its application. The carbon di-oxide mixed with ethylene oxide acts as inert gas i.e. the gas which does not chemically mix with the EO but acts as a carrier to spread in the chamber used for sterilization. Accordingly, it can be safely said that the essential character of gas mixture continued to be of EO only.

It is clear from the above that the impugned goods are EO by its character and by its application also. Therefore the product is surely covered by chapter heading 29101000 of the Central Excise Tariff Act and accordingly is also covered by notification entry no.89 issued under schedule C-54 of the Maharashtra VAT Act attracting rate @5%.

We hope this addresses the issue involved in the said application u/s.56(1). Needless to say, we would be glad to furnish any other information that you may require in the matter.

Technical information about ETO Sterilisation

Convertex Gases Private Limited is engaged in an activity of manufacturing and supplying Ethylene Oxide Based Gas Mixture. Ethylene Oxide mixed with Carbon Di-Oxide is used for ETO gas sterilization. Ratio of Ethylene Oxide and Carbon Di-Oxide is decided by the type of sterilization cycle and type of sterilizer. Commonly used EO:CO₂ mixtures are in the ratio of 10:90, 20:80, 30:70 and 90:10.

At Convertex Gases Pvt Ltd., Pune Ethylene Oxide is brought in tanker from Reliance Industries. It is being transferred to smaller size cylinders mainly 20kgs. /30kgs. /35kgs. by weight. Then the necessary Carbon Di-Oxide is also transferred and mixed in the smaller size cylinder by weight. Thus the required sterile mixture is prepared.

How Does Ethylene Oxide Sterilization Work?

Ethylene oxide sterilization is a chemical process consisting of four primary variables: gas concentration, humidity, temperature and time. Ethylene oxide is an alkylating agent that disrupts the DNA of microorganisms; which prevents them from reproducing. EO sterilization assures that a safe and sterile product will be delivered to the market each and every time.

What is Ethylene Oxide Used for?

The ethylene oxide sterilization process is ideal for:

- Custom procedure kits
- Cellulose and plastic products that may exhibit discoloration with irradiation
- Devices manufactured from materials whose physical properties degrade with heat or irradiation
- Various materials not compatible with other methods of sterilization

Sterilization can be done by various methods like :

1. Steam sterilization
2. Radiation sterilization
3. E beam sterilization
4. Gaseous sterilization
5. Chemical sterilization

ETO sterilization, type of gaseous sterilization is also known as EO or ethylene oxide gas sterilization. Every sterilization method has its own limitations of destroying microorganisms. Major factors that affect the utility of sterilization methods are:

1. Its compatibility with the product, material or substance being sterilized.
2. Acceptability of the packaging.
3. Penetration of the agent to remote areas that may contain viable microorganisms.
4. High level of lethal activity resulting in the need for only low quantities of the sterilizing agent.
5. Relatively inexpensive.
6. High degree of safety and low toxicity.
7. Simplicity.
8. Time required for the process; and
9. Adaptability to in-line processing.

ETO sterilization

Ethylene oxide has been used as an insecticide, pesticide and sterilizing medium for spices, gums and

(latterly medical devices) since 1928. Today it is quite common to use this as a sterilant and many a times along with inert [not reacting chemically with other substances] gas Carbon Di-oxide.

During World War II, work was conducted by the Chemical Corps of the US army and a number of papers were then published by Phillips and Kaye, thoroughly reviewing the use of ethylene oxide as a decontaminant and fumigant. The method of action of ethylene oxide is a complex interaction of a number of important factors. The mechanism of action of ethylene oxide is commonly attributed to its alkylating properties. A hydrogen atom may be replaced by an alkyl group. Ethylene oxide may also react with a carboxylic acid to form a longer chain hydrocarbon and free a hydrogen radical. ETOsterilization depends on following factors:

1. Chamber temperature
2. Relative humidity
3. Time of exposure
4. Concentration of the gas
5. Physical and chemical nature of the environment in which the microbial contaminants are located and the type and the number of microorganisms during gaseous ETO sterilization.

Microbial destruction occurs through the alkylation primarily of tertiary nitrogen groups and phosphoric acid esters of nucleic acid moieties. The chemical acts by alkylating the proteins of microorganisms, thereby upsetting their equilibrium. If the process is applied correctly, this reaction is irreversible, and reanimation of the alkylated microorganisms is prevented. Other than a minimal concentration of the gas itself, humidity (water vapour) is the most critical factor in any ETO sterilization process. Ethylene oxide (EO) is suitable for sterilizing heat labile articles that will withstand temperatures of 50-60oC. It is a method, which requires careful control in respect of its explosive characteristics, toxicity and for monitoring the efficiency of the process.

EO is a hazardous chemical and is neither suitable nor practical to handle EO by the technicians at the floor level. To enable the Ethylene Oxide to spread in the sterilisation chamber; a controlled dozes of the EO using the CO2 as a carrier is used. Carbon Di-oxide does not react chemically with EO but allows EO to spread and reach to the products to be sterilised.

Thus it is clear from above that without Ethylene oxide there can not be any sterilisation and CO2 is only used as inert gas.”

04. OBSERVATIONS

I have gone through the facts of the case. The applicant prefers to term the product as a mixture containing ethylene oxide and carbon dioxide. The applicant has furnished invoices of the aforesaid product. As can be seen from the Table, reproduced hereinabove, of the invoices submitted for determination, the invoices show the mixture of the product in terms of varying proportions of the ingredients of ethylene oxide and carbon dioxide in the mixture. The bill no.001 shows the percentage of ethylene oxide to be 90% and that of carbon dioxide to be 10% whereas bill no.00123 shows the percentage of ethylene oxide and carbon dioxide to be 13% and 87% respectively. Thus, prima facie, at least, the specifications show differing products on account of the varying percentages. Now, the applicant has claimed that the impugned 3 products fall in the 5% tax slab by virtue of being specified in the notification for the purposes of the schedule entry for industrial inputs. The entry and the description under the notification reads thus :

Industrial inputs and packing materials as may be notified, from time to time, by the State Government in the Official Gazette.

The notification under this entry refers to the classification under the Central Excise Tariff. Not all items known as 'industrial inputs' and 'packing materials' are covered by this entry. Only relevant Tariff Headings in the context of the entry under the MVAT Act,2002 have

been notified under the entry. The description against any particular Central Excise Tariff Heading (CETH) may or may not have been taken in its entirety for the purposes of the notification under the MVAT Act,2002. Thus, it is not the case that if any particular Tariff Heading has been notified then all the products under the said Tariff Heading would fall in the entry C-54. It needs to be seen as to what description is given against a Tariff Heading which has been notified for the purposes of the notification. What is relevant is the description against the notified Tariff Heading. What is important is as to whether a product falls in the description as has been notified against a particular Tariff Heading which has been included in the notification. Therefore, only those products which fall in the description as appearing against the Central Excise Tariff as notified for the purposes of the notification under the MVAT Act,2002 would stand covered by the entry. Thus, to claim coverage under the entry C-54, it is important that the applicant has to establish that the impugned products -

a. fall in the CETH which has been notified;

AND MORE IMPORTANTLY

b. are covered by the description against the CETH as has been notified.

In the present case, the applicant claims that the impugned products are covered by the CETH 29101000. The Heading 2910 has been notified in the notification dt.01.09.2005 for the purposes of the entry C-54. The description against this Tariff Heading for the purposes of the notification and under the Central Excise Tariff may be seen thus :

Description against CETH 2910 for the purposes of the notification

2910	Epoxides, epoxyalcohols, epoxyphenols and epoxyethers, with a three-membered ring and their halogenated, sulphonated, nitrated or nitrosated derivatives.
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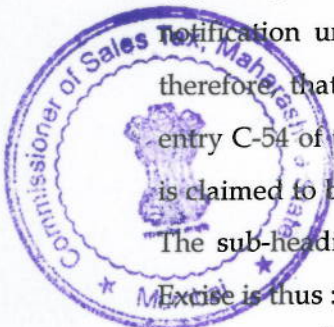
Description against CETH 2910 for the purposes of the Central Excise Tariff

2910	Epoxides, Epoxyalcohols, Epoxyphenols and Epoxyethers, with a three-membered ring and their halogenated, sulphonated, nitrated or nitrosated derivatives.
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From the above two Tables, we can see that the description against the CETH 2910 as appearing under the Central Excise Tariff has been taken in its entirety for the purposes of the notification under the MVAT Act,2002. Since the entire Heading has been taken, it follows, therefore that all the items falling under this Heading would stand covered by the schedule entry C-54 of the MVAT Act,2002. The issue now is as to whether the impugned product which is claimed to be a mixture of ethylene oxide and carbon dioxide is covered by the Heading 2910. The sub-heading as informed is 2910 10 00. The description against the same under Central Excise is thus :

2910 10 00	- Oxirane (ethylene oxide)
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Thus, the CETH 29101000 covers Oxirane or ethylene oxide whereas the impugned product is comprising ethylene oxide and carbon dioxide. The issue to be decided, therefore, is whether the product consisting of ethylene oxide and carbon dioxide is the same as ethylene oxide.



Now, we see that the CETH description is very specific as being "ethylene oxide" only and not for a "mixture containing ethylene oxide and carbon dioxide". One thing is sure and that is that the impugned product is not pure ethylene oxide as it consists of carbon dioxide, too, whereas the description under Central Excise covers only ethylene oxide. With regard to this crucial point, I find that the applicant has made arguments thus :

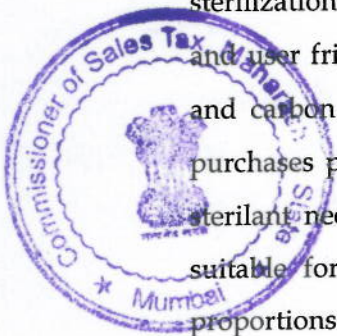
- a. The product would remain ethylene oxide despite the presence of carbon dioxide as carbon dioxide is acting in the mixture as an inert gas.
- b. The Central Excise rules say that *mixtures, composite goods consisting of different materials or made up of different components, and goods put up in sets for retail sale, which cannot be classified by reference to (a)*, shall be classified as if they consisted of the material or component which gives them their essential character, in so far as this criterion is applicable.*

[* - The (a) mentioned in (b) above reads thus "(a) *the heading which provides the most specific description shall be preferred to headings providing a more general description. However, when two or more headings each refer to part only of the materials or substances contained in mixed or composite goods or to part only of the items in a set put up for retail sale, those headings are to be regarded as equally specific in relation to those goods, even if one of them gives a more complete or precise description of the goods.*"]

I have recorded my observation above. However, with regard to the above arguments, I find thus :

The impugned product is not pure ethylene oxide. The applicant informs and it is also stated in the brochure of the applicant that the ratio of Ethylene Oxide and Carbon Di-Oxide is decided by the type of sterilization cycle and the type of sterilizer. It is also informed that the proportion commonly used is EO:CO₂ mixtures in the ratio of 10:90, 20:80, 30:70 and 90:10. As I see the proportions, I have to observe that with the varying percentages, the product that each ratio would throw up would be distinctive of that particular proportion. The product with the proportion 10:90 cannot be substituted for the product proportion of 90:10. This is because the proportion chosen by the applicant would be the ideal sterilant for the article desired to be sterilized. Also, the applicant informs that ethylene oxide cannot be used directly in the sterilization process and further that, the strength of the same is to be reduced to make it safe and user friendly for its application. Thus, the impugned product consisting of ethylene oxide and carbon dioxide cannot be regarded as ethylene oxide itself. The fact that the applicant purchases pure ethylene oxide and then adds carbon dioxide while selling as per the type of sterilant needed itself shows that a new product is formed by the applicant which is made suitable for use as a sterilizer by addition of another product namely carbon dioxide in proportions depending on the product to be sterilised. Thus, the impugned products of varying percentages are formed from the ethylene oxide and are not ethylene oxide per se.

It has been argued that carbon dioxide acts as an inert gas and does not cause any chemical reaction and therefore it is contended that the product consisting of ethylene oxide and carbon dioxide is the same as ethylene oxide. I find that the submission of the applicant



alongwith the application itself addresses the issue. The applicant has submitted that *ethylene oxide cannot be used directly in the sterilization process*. Thus, pure ethylene oxide would be different in its suitability than the ethylene oxide to which carbon dioxide has been added. It has been further submitted that the strength of the ethylene oxide is to be reduced to make it safe and user friendly for application. *If ethylene oxide and ethylene oxide mixed with carbon dioxide are the same then why is the need to reduce the strength of the ethylene oxide and also to further make it safe and user friendly for application*. Thus, by the applicant's own submission, I find answers to the issue before me. I have also referred to certain articles on the Internet about the ethylene oxide and carbon dioxide combinations which show details thus :

- **Hawley's Condensed Chemical Dictionary**

Ethylene oxide (epoxyethane; oxirane).

CAS: 75-21-8. 23rd highest-volume chemical produced in US (1985).

CH₂ - CH₂

\ /
O

Properties: Colorless gas at room temperature, liquid at approximately 13C, soluble in organic solvents, miscible with water, fp -111.3C, bp 10.73C, d 0.8711 (20/20C), bulk d 7.25 lb/gal (20C), viscosity 0.32 cp (0C), flash p approximately 0F (-17.7C) (TOC), autoignition temperature 805F (429C).

Derivation: (a) oxidation of ethylene in air or oxygen with silver catalyst, (b) action of alkali on ethylene chlorohydrin.

Grade: Technical, pure (99.7%).

Hazard: Irritant to eyes and skin. TLV: 1 ppm in air, a suspected human carcinogen. Highly flammable, dangerous fire and explosion risk, flammable limits in air 3-100%.

Use: Manufacture of ethylene glycol and higher glycols, surfactants, acrylonitrile, ethanolamines, petroleum demulsifier, fumigant, rocket propellant, industrial sterilant, e.g., medical plastic tubing, fungicide.

- **http://web1.hi2000.com/chem/zhejiang/linhai/pages/ethylene_oxide.htm**

After it is mixed with catalyst and ethylene oxide, it is not only safe to use, but also will greatly reduce its toxicity. In mixed disinfectant added with catalyst, the steam pressure is enlarged so as to intensify penetrating force of ethylene oxide and improve the effect of sterilization. Additionally, carbon dioxide is one type of nontoxic disinfectant. When large amount of it exists together with ethylene oxide, it can absorb large amount of toxic gas, so the procedure of resolution is fast.

- **<http://monographs.iarc.fr/ENG/Monographs/vol100F/mono100F-28.pdf>**

A very small proportion (0.05%) of the annual production of ethylene oxide is used directly in the gaseous form as a sterilizing agent, fumigant and insecticide, either alone or in non-explosive mixtures with nitrogen, carbon dioxide or dichlorofluoromethane (Dever et al., 2004). It is used to sterilize drugs, hospital equipment, disposable and reusable medical items, packaging materials, foods, books, museum artefacts, scientific equipment, clothing, furs, railcars, aircraft, beehives and other items (Lacson, 2003).

- **<https://cameochemicals.noaa.gov/chemical/5788>**

Ethylene oxide-carbon dioxide mixture is a colorless gas with an ether-like odor. Carbon dioxide is noncombustible. Ethylene oxide is flammable. The mixture can asphyxiate by displacement of air. Under prolonged exposure to fire or intense heat the containers may rupture violently and rocket. It is used as a fumigant.

- **<http://www.fao.org/docrep/x5042e/x5042e0d.htm>**

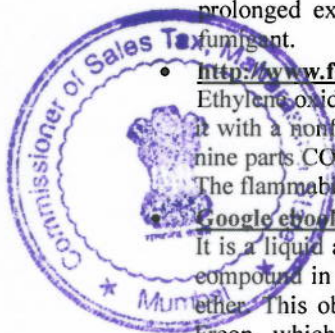
Ethylene oxide is flammable within wide limits. It is therefore necessary in many commercial applications to mix it with a nonflammable carrier. It is obtainable mixed with carbon dioxide in the proportion of one part ETO to nine parts CO₂ by weight or 11 or 12 percent ETO with nonflammable halogenated hydrocarbon refrigerant gases. The flammability limit of ethylene oxide - methyl bromide - air mixtures is given by Hashigochi et al (1967).

- **Google ebooks - Microbiology by Michael J. Pelczar**

It is a liquid at temperatures below 10.8°C [51.4°F]. Above this temperature it vaporizes rapidly. Vapors of this compound in air are highly flammable even in low concentrations. In this respect it is very much like dimethyl ether. This objectionable feature was overcome by preparing mixtures of ethylene oxide in carbon dioxide or Freon, which are now available commercially. The carbon dioxide-ethylene oxide or Freon-ethylene oxide mixtures are nonflammable, and there is no alteration of the microbicidal activity of the ethylene oxide. The carbon dioxide and the Freon merely serve as inert diluents which prevent flammability.

- **http://www.lindegaz.com.tr/en/products_and_supply/packaged_chemicals/product_range/ethylene_oxide**

Linde is one of the leading global providers of packaged ethylene oxide (C₂H₄O), operating multiple package filling plants around the world. Linde's packaged ethylene oxide is normally available in cylinders, bundles and drum tanks, both in pure form, and blended - most commonly with carbon dioxide.



- **wikipedia**

The direct use of ethylene oxide accounts for only 0.05% (2004 data) of its global production.^[73] Ethylene oxide is used as a sterilizing agent, disinfecting agent and fumigant as a mixture with carbon dioxide (8.5–80% of ethylene oxide), nitrogen or dichlorodifluoromethane (12% ethylene oxide). It is applied for gas-phase sterilization of medical equipment and instruments, packaging materials and clothing, surgical and scientific equipment;^[73] for processing of storage facilities (tobacco, packages of grain, sacks of rice, etc.), clothing, furs and valuable documents.^[96]

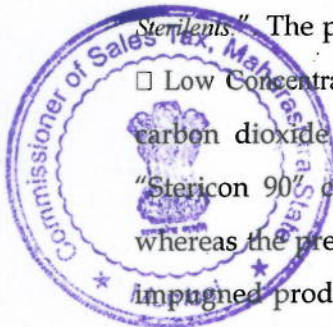
- **http://www.indiaglycols.com/divisions/industrial_gases_eto.htm**

Mixtures of ethylene oxide and carbon dioxide -

Sr No	Product description	Ethylene oxide	Co2	Flammability
1	IGL Steri-Gas 10	10	90	Non-flammable
2	IGL Steri-Gas 12	12	88	Non-flammable
3	IGL Steri-Gas 13	13	87	Non-flammable
4	IGL Steri-Gas 20	20	80	Flammable
5	IGL Steri-Gas 30	30	70	Flammable
6	IGL Steri-Gas 80	80	20	Flammable
7	IGL Steri-Gas 90	90	10	Flammable
8	IGL Steri-Gas 99	99	1	Flammable
9	IGL Steri-Gas 100	100	0	Flammable

I have reproduced the details from the Chemical Dictionary, too. A perusal of all the above shows that ethylene oxide has many uses and one of it as being a sterilizer. It is seen and the applicant also accepts the same that pure ethylene oxide has to be made suitable for use as sterilant or steriliser by the addition of some ingredients. It is informed that the raw material is 'pure ethylene oxide' which is purchased in bulk in tanker loads. The ethylene oxide so purchased is not resold as it is but repacked in smaller cylinders and carbon dioxide is mixed and sold as 'ethylene oxide based gaseous sterilents'. It is also marketed and advertised as 'ethylene oxide based Gaseous Sterilents' and the ratio of Ethylene Oxide and Carbon Dioxide is maintained depending on the type of sterilization cycle and type of sterilizer. The TABLE above shows that with the varying percentages of the ingredients, the ethylene oxide goes from flammable to inflammable. Sterilizers are a distinct product category. The brochure of the applicant bears testimony to the above when it says that "Convertex Gases Private Limited is a ISO 9001 : 2008 certified company, engaged in an activity of manufacturing and supplying Ethylene Oxide Based Gaseous Sterilents".

The product category is described thus - "Products : Sterilent™ □ High Concentration EO □ Low Concentration EO" Thus, it cannot be said that the product obtained by the addition of carbon dioxide which has a distinct identity as a sterilizer and known by names such as "Stericon 90%" can be regarded as "Ethylene oxide". The CETH 2910 covers ethylene oxide whereas the present products are made from ethylene oxide and not ethylene oxide per se. The impugned products do not fall in the CETH 2910 and therefore, even though the heading 2910 has been taken in its entirety for the purposes of the notification, these won't be benefitted by the said Heading having been notified under the schedule entry C-54. I have to observe that the arguments as regards flammability and obtaining of licenses would not prove useful and as the impugned products are not ethylene oxide but sterilants of required proportion made from



ethylene oxide. In short, the impugned products being not classifiable under the CETH 2910, it doesn't make a difference if, for the purposes of the MVAT Act, 2002, the said Heading has been notified or otherwise.

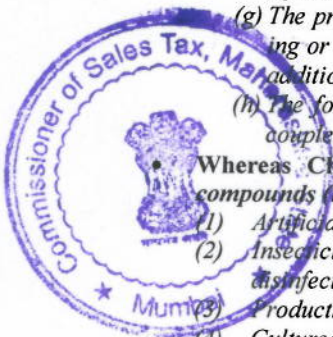
As regards the argument that mixtures, composite goods consisting of different materials or made up of different components, and goods put up in sets for retail sale being classified as if they consisted of the material or component which gives them their essential character, then it is seen thus :

Chapter 38 of the Central Excise Tariff is about 'Miscellaneous Chemical Products'. CETH 3824 has a specific sub-classification dealing with 'mixtures and preparations containing oxirane (ethylene oxide)' which could be reproduced thus :

	- Mixtures and preparations containing oxirane (ethylene oxide), polybrominated biphenyls (PBBs), polychlorinated biphenyls (PCBs), polychlorinated terphenyls (PCTs) or tris (2,3-dibromopropyl) phosphate :
3824 81 00	-- Containing oxirane (ethylene oxide)

It can be seen that the Excise Tariff provides for mixtures and preparations containing ethylene oxide under CETH 3824 81 00. Thus, when a specific classification as to mixtures containing ethylene oxide exists applying the Rules would not make sense. Further, it is also seen that the claim under the Chapter 29 would not survive as a reference to the Harmonized Commodity Description and Coding System Explanatory Notes (HSN) of Chapter 29 and 38 reveals thus -

- **Chapter 29** says that *as a general rule, the Chapter is restricted to separate chemically defined compounds, subject to the provisions of Note 1 of the said Chapter. Note 1 reads thus -*
 1. *Except where the context otherwise requires, the headings of this Chapter apply only to :*
 - (a) *Separate chemically defined organic compounds, whether or not containing impurities;*
 - (b) *Mixtures of two or more isomers of the same organic compound (whether or not containing impurities), except mixtures of acyclic hydrocarbon isomers (other than stereoisomers), whether or not saturated (Chapter 27);*
 - (c) *The products of headings 29.36 to 29.39 or the sugar ethers, sugar acetals and sugar esters, and their salts, of heading 29.40, or the products of heading 29.41, whether or not chemically defined;*
 - (d) *The products mentioned in (a), (b) or (c) above dissolved in water;*
 - (e) *The products mentioned in (a), (b) or (c) above dissolved in other solvents provided that the solution constitutes a normal and necessary method of putting up these products adopted solely for reasons of safety or for transport and that the solvent does not render the product particularly suitable for specific use rather than for general use;*
 - (f) *The products mentioned in (a), (b), (c), (d), or (e) above with an added stabilizer (including an anticaking agent) necessary for their preservation or transport;*
 - (g) *The products mentioned in (a), (b), (c), (d), (e) or (f) above with an added anti-dusting agent or a colouring or odoriferous substance added to facilitate their identification or for safety reasons, provided that the conditions do not render the product particularly suitable for specific use rather than for general use;*
 - (h) *The following products, diluted to standard strengths for the production of azo dyes : diazonium salts, couplers used for these salts and diazotisable amines and their salts.*
- **Chapter 38** says that *the Chapter does not cover separate chemically defined elements or compounds (usually classified in Chapter 28 or 29), with the exception of the following :*
 - (1) *Artificial graphite (heading 38.01).*
 - (2) *Insecticides, rodenticides, fungicides, herbicides, anti-sprouting products and plant-growth regulators, disinfectants and similar products, put up as described in heading 38.08.*
 - (3) *Products put up as charges for fire-extinguishers or put up in fire-extinguishing grenades (heading 38.13).*
 - (4) *Cultured crystals (other than optical elements) weighing not less than 2.5g each of magnesium oxide or of the halides of the alkali or alkaline-earth metals (heading 38.24).*
 - (5) *Ink removers put up in packings for retail sale (heading 38.24), certified reference materials specified in Note 2 below; (5) products specified in Note 3 (a) or 3 (c) below;*
- **Chapter 29** states that *a separate chemically defined compound is a substance which consists of one*



molecular species (e.g., covalent or ionic) whose composition is defined by a constant ratio of elements and can be represented by a definitive structural diagram. In a crystal lattice, the molecular species corresponds to the repeating unit cell.

• **Products which remain classified in Chapter 29, even when they are not separate chemically defined compounds**

There are certain exceptions to the rules that Chapter 29 is limited to separate chemically defined compounds. These exceptions include the following products:

Heading 29.09 - Ketone peroxides.

Heading 29.12 - Cyclic polymers of aldehydes; paraformaldehyde.

Heading 29.19 - Lactosphates.

Heading 29.23 - Lecithins and other phosphoaminolipids.

Heading 29.34 - Nucleic acids and their salts.

Heading 29.36 - Provitamins and vitamins (including concentrates and intermixtures), whether or not in a solvent.

Heading 29.37 - Hormones.

Heading 29.38 - Glycosides and their derivatives.

Heading 29.39 - Vegetable alkaloids and their derivatives.

Heading 29.40 - Sugar ethers, sugar acetals and sugar esters, and their salts.

Heading 29.41 - Antibiotics.

This Chapter also includes diazonium salts (see Part (A) of Explanatory Note to heading 29.27), couplers used for these salts and diazotisable amines and their salts, diluted with e.g., neutral salts to standard strengths. These are designed for the production of azo dyes. They may be solid or liquid.

This Chapter further includes pegylated (polyethylene glycol (or PEGs) polymers) derivatives of products of headings 29.36 to 29.39 and 29.41. For these products, a pegylated derivative remains classified in the same heading as its non-pegylated form. However, pegylated derivatives of products of all other headings of Chapter 29 are excluded (generally heading 39.07)

• **Exclusion from Chapter 29 of certain separate chemically defined organic compounds (Chapter Note 2)**

(1) Certain separate chemically defined organic compounds are always excluded from Chapter 29, even when they are pure. In addition to those which fall in Chapter 28 (see Part (B) of the General Explanatory Note to that Chapter), examples of compounds of this groups are :

(a) Sucrose (heading 17.01); lactose, maltose and fructose (heading 17.02).

(b) Ethyl alcohol (heading 22.07 or 22.08).

(c) Methane and propane (heading 27.11).

(d) Urea (heading 31.02 or 31.05).

(e) Colouring matter of animal or vegetable origin (e.g., chlorophyll) (heading 32.03).

(f) Synthetic organic colouring matter (including pigments), and synthetic organic products of a kind used as fluorescent brightening agents (e.g., certain stilbene derivatives) (heading 32.04).

(2) Certain other separate chemically defined organic products, which would otherwise have been classified in Chapter 29, may be excluded when put up in certain forms, or if they have been subjected to certain treatments which leave their chemical composition unchanged. Examples are :

(a) Products for therapeutic or prophylactic uses, put up in measured doses or in forms or in packing for retail sale (heading 30.04).

(b) Product of a kind used as luminophores (e.g., salicylaldazine) which have been treated to render them luminescent (heading 32.04).

(c) Dyes and other colouring matter put up in form or packings for retail sale (heading 32.12).

(d) Perfumery, cosmetic or toilet preparations (e.g., acetone), put up in packings for retail sale for such use (headings 33.03 to 33.07).

(e) Products suitable for use as glues or adhesives, put up for retail sale as glues or adhesives, not exceeding a net weight of 1 kg (heading 35.06).

(f) Solid fuels (e.g., metaldehyde, hexamethylenetetramine) put up in forms for use as fuels, and liquid or liquefied fuels (e.g., liquid butane) in containers of a kind used for filling or refilling cigarette or similar lighters and of a capacity not exceeding 300 cm³ (heading 36.06).

(g) Hydroquinone and other unmixed products for photographic uses, put up in measured portions or put up for retail sale in a form ready for photographic use (heading 37.07).

(h) Disinfectants, insecticides, etc., put up as described in heading 38.08.

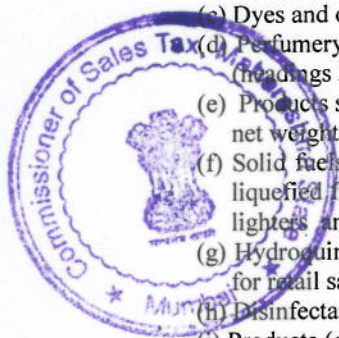
(i) Products (e.g., carbon tetrachloride) put up as charges for fire-extinguishers or put up in fire-extinguishing grenades (heading 38.13)

(k) Ink removers (e.g., chloramines of heading 29.35 dissolved in water) put up in packings for retail sale (heading 38.24).

(l) Optical elements (e.g., ethylenediamine tartrate) (heading 90.01).

It can be seen from the above extracts that chapter 29 covers *separate chemically defined compounds* whereas the impugned products are not so separately defined. There is no fixed

chemical formula or CAS No. for these products whose proportion keeps on changing. Further,



the impugned products also do not fall in the exceptions to separate chemically defined compounds of this Chapter. In view thereof, their inclusion in Chapter 29 is not found validated. Therefore, the applicant's claim for inclusion in the notification under CETH 2910 is invalidated for this reason, too.

The applicant has placed reliance on a letter from the Central Excise authorities which the applicant claims to categorically say that the impugned products fall under the CETH 2910. I would reproduce the same thus :

"Sub: Confirmation of Excise chapter No. 29 10 1000 for our product -reg

Please refer to your letter dated 02.07.2012 seeking confirmation of classification of the product.

In this connection this is to certify that the ethylene Oxide which is the main components of your product of gas mixture is falling under chapter sub heading No 29101000 of the Central Excise Tariff Act, 1985."

The aforesaid letter is signed by the Superintendent, Central Excise. I leave aside the discussion to ascertain the validity of the clarification in terms of authority to issue clarifications. This as I find that nothing contradictory to what is stated in the Central Excise Tariff has been affirmed in the aforesaid letter. The clarification clearly states that the main ingredient of the applicant's products falls in the CETH 29101000 and this main ingredient is also stated as being 'ethylene oxide'. We have seen above that the CETH 29101000 covers "Oxirane (ethylene oxide)". The letter does not say that the applicant's products fall in CETH 29101000. However, the applicant is very aggressive in his argument that the aforesaid letter has referred to the applicant's letter seeking clarification and therefore, the same has to be read as clarifying that the mixture falls in the CETH 29101000. I have reproduced the wording as at above and there could be no inference or interpretation as suggested by the applicant. The language being clear, I would not dwell any further on the argument.

Herein, I have to mention that the applicant had earlier requested for clarification of the rate of tax on the impugned products. The said letter seeking clarification was not an application under the provisions of section 56 of the MVAT Act,2002. The applicant was informed by letter dt.21.06.2012 that the CETH 29101000 specified ethylene oxide only and not the mixture. Hence, he was asked to adduce evidence as to the said product being falling under the CETH 2910. Thereafter, the applicant submitted the aforesaid letter from the authority under the Central Excise. Hence, the applicant was, by letter dt.20.11.2012, categorically explained that the aforesaid letter is silent on the classification of the EO based gas mixture prepared by the applicant. A prima-facie view was given therein as to the impugned products falling in the residuary schedule entry E-1 and therefore, liable to tax @12.5%. In response to a fresh letter from the applicant, the applicant was, by letter dt.12.04.2013, informed that in absence of any new documentary evidence, the view given earlier holds good. Thus, the applicant was given an idea about the purport of the letter issued by the Excise authority. However, the same is again tendered as an argument in the present proceedings. I have dealt with the same above.



The applicant has furnished a copy of Form E.R.-1 about 'Details of the Manufacture, Clearances' [Return of excisable goods and availment of cenvat credit for the month of December 2012] which shows quantity of 'EO + CO2 Gas Mixture' cleared at 45296 and 875 whereas 'Pure EO (100%) at 2340. What is seen from the aforesaid is that the applicant has treated pure ethylene oxide and the product formed from ethylene oxide consisting of a mixture, as stated by the applicant, of ethylene oxide and carbon dioxide as being different products. And we have seen that only ethylene oxide is classifiable in the CETH 2910.

The applicant has also given copies of the Licence No.G/HO/MH/05/278 (G1124) in Form E, Licence No.G/HO/MH/06/258 (G1124) in Form F and Licence No.S/HO/MH/03/480 (S749) in Form III, all issued by the Chief Controller of Explosives are also submitted by the applicant. Form E is a licence to fill compressed gas in cylinders and is given for the 'ethylene oxide + carbon dioxide mixture' which is identified as a 'Toxic' type of gas. Form F is a licence to store compressed gas in cylinders and is given for two products, namely the 'ethylene oxide + carbon dioxide mixture' which is identified as a 'Toxic' type of gas and for 'carbon dioxide' which is identified as a 'Non-Toxic and Non Flammable' type of gas. Form III is a licence to store compressed gas in pressure vessel or vessels is given for the descriptions 'Carbon dioxide (liquefied)' [Flammable/Corrosive/Toxic Gases] and 'ethylene oxide (liquefied)' [Non-toxic Gases]. These documents also help to understand that 'ethylene oxide' and sale 'ethylene oxide based gaseous sterilents' are not treated as one and the same products.

The applicant has placed reliance on yet another document and which is an opinion about the classification of Ethylene Oxide under Central Excise Tariff from Mr. Vijay S. Rane, Advocate H.C Mumbai. This opinion cannot be regarded as an authority in the matter or of equivalence of the judgment of a Hon. Court or Tribunal and I am under no compulsion to follow any such opinion. Nevertheless, if we see the same then it is again about the mixture falling in the same chapter subheading till the predominance of 'Ethylene Oxide' is maintained in that particular mixture. I have dealt with this issue above wherein reference is made to the CETH 3824. Therefore, I need not deal with this evidence again.

Now, we have seen above that '*mixtures and preparations containing oxirane (ethylene oxide)*' fall under CETH 3824. It is seen that the schedule entry for industrial inputs and packing materials has notified the Heading 3824 thus :

Description against CETH 3824 for the purposes of the notification

3824	<i>Prepared binders for foundry moulds or cores; Retarders used in the printing industry</i>
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Description against CETH 2910 for the purposes of the Central Excise Tariff

3824	<i>Prepared binders for foundry moulds or cores; chemical products and preparations of the chemical or allied industries (including those consisting of mixtures of natural products), not elsewhere specified or included</i>
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Thus, it can be seen that the description for the purpose of the notification under the MVAT Act,2002 is not the same as the description against the Tariff Heading under the Central

Excise Tariff. The notification for the purposes of the MVAT Act,2002 have considered for concessional rate only the products covered by the description 'Prepared binders for foundry moulds or cores; Retarders used in the printing industry'. The present products are not covered by the aforesaid description. It is also seen that there is no other description as notified for the purposes of the schedule entry C-54 which could cover the impugned products. Further, there is also no specific schedule entry for the impugned products in any of the Schedules appended to the MVAT Act,2002. In view thereof, the impugned products find placed in the residuary schedule entry E-1 of the MVAT Act,2002, thereby taxable @ 12.5%. I have, therefore, to observe that the applicant has been rightly collecting tax @ 12.5% on the sale of the impugned products.

05. In view of the deliberations held hereinabove, it is determined thus -

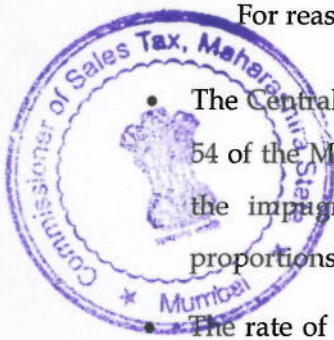
ORDER

(under section 56(1)(e) of the Maharashtra Value Added Tax Act, 2002)

No.DDQ-11/2013/Adm-6/32/B- 4

Mumbai, dt. 30/3/2016

For reasons as discussed in the body of the order, it is herewith determined that -



- The Central Excise Tariff Heading 2910 as notified for the purposes of the schedule entry C-54 of the Maharashtra Value Added Tax Act, 2002 covers 'Oxirane (ethylene oxide)' and not the impugned products consisting of ethylene oxide and carbon dioxide in varying proportions.

- The rate of tax on the following products is 12.5% being covered by the residuary schedule entry E-1 of the Maharashtra Value Added Tax Act, 2002 :

Bill No. & dt.	Description
001 dt.05.03.2012	Stericon 90 (90% EO + 10% CO2)
00762 dt.06.03.2012	Stericon 90 (90% EO + 10% CO2)
00123 dt.06.06.2013	Stericon 90 (13% EO + 87% CO2)
049 dt.01.06.2013	Stericon 10 (10% EO + 90% CO2)
00237 dt.01.06.2013	Stericon 10 (10% EO + 90% CO2)

(RAJIV JALOTA)

COMMISSIONER OF SALES TAX,
MAHARASHTRA STATE, MUMBAI