

South Bihar Sugar Mills Ltd., Etc.

Vs

Union of India & Ors

Civil Appeals Nos. 289 to 311 of 1965 and 999 to 1001 of 1967

(CJI K. N. Wanchoo, R. S. Bachawat, J. M. Shelat, G. K. Mitter, C. A. Vaidialingam JJ)

05.02.1968

JUDGMENT

SHELAT, J.

These appeals, by certificate, are against the common judgment of the High Court of Punjab which dismissed the writ petitions filed by the appellant companies challenging the legality of excise duty levied against them under Item 14-H in Sch. 1 to the Central Excise and Salt Act, 1 of 1944. Writ Petition 212 of 1966 by Tata Chemicals Ltd. also raises the same question. As both the appeals and the writ petition raise a common question of law they were heard together and are disposed of by this common judgment.

The appellant companies manufacture sugar by carbonation process as against sulphitation process employed by some other manufacturers of sugar and pay excise duty on the sugar manufactured by them under Item 1 of Sch. 1 to the Act. According to the affidavit of V. J. Bakre, Deputy Chief Chemist of the Central Revenue Control Laboratory, these manufacturers burn limestone with coke in a lime kiln with a regulated amount of air and generate a mixture of gases consisting of carbon dioxide, nitrogen, oxygen and a small quantity of carbon monoxide. Most of the oxygen from the air is used up by the coke in the process of burning itself. The coke so burnt supplies the heat which decomposes the limestone so as to generate carbon dioxide. The gas thus produced is sucked by a pump through a pipe which connects the kiln with the inlet side of the pump. The gas enters the chamber of the pump and is then immediately compressed by means of the compression stroke of the pump. At this stage the gas is forced into a narrower space and as a result of the compression stroke it acquires pressure exceeding the atmospheric pressure. The gas compressed is let into the delivery pipe which connects the outlet side of the pump with the tank containing the sugarcane juice and enters the sugarcane juice with the acquired pressure behind it. But for the compression resulting in pressure the gas would not bubble in the sugarcane juice. In the tank there is besides the sugarcane juice milk of lime which is mixed so as to remove the impurity in and refine the juice. Thus, it is carbon dioxide which reacts on the lime and what is produced is an insoluble content known as calcium carbonate. The other gases, viz., nitrogen, oxygen, carbon monoxide do not contribute in the process of clarification of the sugarcane juice. These are innocuous so far as the process of clarification of sugarcane juice is concerned and escape into the atmosphere by a vent provided in the sugarcane juice tank. Along with these gases a certain amount of carbon dioxide which remains unabsorbed also escapes. The carbon dioxide content in the mixture of gases ranges from 27 to 36.5%. Thus, the process involves the forcing of impure carbon dioxide into a narrower space within the chamber of the pump where it is compressed and pushed first into the delivery pipe and then into the tank containing the juice. The respondents' case therefore was that the process employed by the appellant companies involves compressing carbon dioxide and with the pressure

achieved pushing it through sugarcane juice. The appellant companies therefore produced carbon dioxide through the lime kiln which was taken first to the Co₂ pump and there compressed and then pushed into the tank.

The Tata Chemicals Ltd. manufactures among other products soda ash by solvay ammonia soda process. The solvay process as described by the said V. J. Bakre is as follows :-

First common salt is dissolved in water and ammonia gas is passed through such dissolved salt called brine. The ammonia gas gets absorbed in the brine. The solution so formed is called AB solution, that is, ammoniated brine. The AB solution is introduced at the top of a carbonating tower and passed from section to section from the top to the bottom of the tower. At the bottom of the tower compressed carbon dioxide is forced through at a pressure of 40 to 50 pounds per square inch and is bubbled through the liquid in all the sections of the tower. The chemical reactions involved in the tower are : (i) Ammonia Gas plus, (ii) Carbon dioxide plus, (iii) water of the brine solution. These react together to form ammonium bicarbonate which reacts with salt in brine to produce sodium bicarbonate and ammonium chloride. The sodium bicarbonate thus formed being much less soluble in the liquid is precipitated and is then taken out from the bottom of the tower. It is then filtered and the sodium bicarbonate in moist condition is left on the bed of the filter and the solution which is mostly of ammonium chloride is pumped to ammonia reaction tower where ammonia is produced. Moist sodium bicarbonate is then washed and is heated in a calciner at 200 degree centigrade. The sodium bicarbonate gets decomposed to give soda ash, water and carbon dioxide. Carbon dioxide thus produced is reutilised in the cycle of manufacture of soda ash. It contains 85% pure carbon dioxide (according to the Company's expert 50 to 60%) and is mixed with carbon dioxide sucked by the compressor from the lime kiln. The whole mixture, which contains about 60% of pure carbon dioxide is compressed in the compressor to a pressure of 40 to 45 lbs. per sq. inch. Thus carbon dioxide is essential in the production of soda ash and is produced by burning limestone with coke in a kiln in the same manner as by the sugar manufacturing concerns which employ carbonation process. The carbon dioxide so produced in the kiln is first compressed in the compressor during the compression stroke, and thereafter the piston compresses the gas in the said cylinder at pressure of more than 40 to 50 pounds per square inch. The gas so compressed is compressed carbon dioxide which comes out of another valve in the cylinder and comes into the delivery side of the compressor admixed with carbon dioxide from the calciner. This gas is throughout at a pressure of 40 to 45 lbs. per sq. inch. This gas so manufactured is independent of soda ash. The compressed carbon dioxide so produced does not lose its identity of being compressed carbon dioxide. Pure compressed carbon dioxide is isolated from the admixture of gases in the carbonating tower where chemical reaction takes place and is used in the manufacture of soda ash. According to the Revenue the processes employed by the appellant companies and by Tata Chemicals Ltd. thus involve production of compressed carbon dioxide which is amenable to excise duty.

Item 14-H of Sch. 1 reads as follows :

"14-H. Compressed, liquefied or solidified gases, the following :

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(iv) Carbon acid Fifty per cent (carbon dioxide) ad valorem

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By a notification dated March 2, 1963 issued under r. 8(1) of the Central Excise Rules, 1944 the Central Government exempted as from April 24, 1962 carbonic acid utilized in manufacture of sugar within the factory of production for clarifying and bleaching sugarcane juice or syrup from so much of the excess of Rs. 25/- per metric tonne.

The contentions raised on behalf of the appellant companies and Tata Chemicals Ltd. may be summarised as follows :-

- (1) that the lime kiln is maintained to generate a mixture of gases and not carbon dioxide;
- (2) that at no stage in the process of generating this mixture and sucking it into the sugarcane juice for refining, carbon dioxide which forms one of the contents of the said mixture is either compressed, liquidified or solidified;
- (3) that the mixture of gases so generated is not carbon dioxide as known to the market;
- (4) that according to the specifications laid down by the Indian Standards Institution carbon dioxide content has to be at least 99%;
- (5) that the mixture of gases so generated has no other use except for processing sugarcane juice;
- (6) that the said mixture is neither sold nor is marketable nor known to the trade;
- (7) that the excise duty sought to be recovered on the content of carbon dioxide in the said mixture of gases cannot fall under Item 14-H;
- (8) that these concerns are not manufacturers of carbon dioxide as carbon dioxide is not separated from the said mixture of gases by any process nor is the carbon dioxide content in the said mixture compressed, liquefied or solidified;
- (9) that the mere fact that the said mixture of gases is passed through a conduit pipe by a process of suction cannot mean that carbon dioxide becomes compressed carbon dioxide at that or any other stage;
- (10) that the term "compressed" in Item 14-H contemplates the form in which the article sought to be levied is manufactured. There is no separation of carbon dioxide from the said mixture at any stage nor is it compressed or stored as carbon dioxide in cylinders; and lastly.
- (11) that the duty being on goods it can be charged only on goods known as carbon dioxide in the trade and marketable as such.

The contentions of the Revenue, on the other hand, were :-

- (1) that the mixture of gases generated as aforesaid is nothing but impure carbon dioxide in the sense that during the process of burning limestone with coke a small quantity of carbon monoxide is released by the burning of coke, the other gases in the mixture being nitrogen and oxygen derived from the air which is let into the kiln to aid combustion;
- (2) that these concerns require carbon dioxide for refining sugarcane juice and manufacture it out of limestone and coke. The other gases which get mixed up are unavoidable on account of the process employed by them;
- (3) that these extraneous gases can be separated and the manufacturers would separate them if what they require is pure carbon dioxide. They do not do so because carbon dioxide mixed with other gases produces the same effect in the process of refining as without them;
- (4) that the fact that in the process of its manufacture carbon dioxide gets mixed up with other gases does not mean that carbon dioxide which is intended to be and is in fact produced loses its characteristics as such. The gas thus produced contains 30 to 35% carbon dioxide;
- (5) that the specifications laid down by the Indian Standards Institution are not relevant as they are for cylindered carbon dioxide bought and sold in the market as pure carbon dioxide;
- (6) that carbon dioxide produced by these concerns can be sold in the condition in which it is produced and used by other sugar mills and by factories manufacturing soda ash by solvay process.

In support of their contentions the appellant companies as also the Tata Chemicals Ltd. relied on the specifications laid down by the Indian Standards Institution and the several affidavits made by concerns using carbon dioxide for the manufacture of their respective goods. As most of them are identical, it is sufficient to take the affidavit of one Shantilal Patel as typical. The deponent there asserts that the company of which he is the senior chemist uses carbon dioxide in considerable quantity in manufacturing aerated waters, that carbon dioxide so used contains 99.5% of pure carbon dioxide, that compressed liquidified or solidified carbon dioxide as known to the trade or sold in the market contains a minimum of 99% carbon dioxide conforming to the specifications of the Indian Standards Institution, that such carbon dioxide is contained in steel cylinders under a pressure of minimum of 1000 lbs. per sq. inch and that kiln or calciner gas is not known to the trade as carbon dioxide nor is it marketed as such. Dr. Homi Ruttonji whose affidavit was produced by Tata Chemicals Ltd. states that for the purpose of manufacturing carbon dioxide an elaborate plant shown in the annexure to his affidavit would have to be set up separate from the plant and equipment used in the manufacture of soda ash and refutes the statement of the said Bakre that compressed carbon dioxide is forced through at a pressure of 40 to 45 lbs. per sq. inch or that at the bottom of the said carbonating tower pure compressed carbon dioxide is or can be isolated from the mixture of gases in that tower where chemical reaction takes place. He also refutes the statement that the process of generating kiln gas is independent of the manufacture of soda ash and states that the process of manufacture of soda ash is a continuous and integrated process wherein a certain

quantity of kiln gas is released which is directly utilised without removal or storage in the manufacture of soda ash. According to him, kiln gas released during the manufacture of soda ash is never known as carbon dioxide in the market. To obtain marketable carbon dioxide from kiln gas an elaborate plant would be required for separation and purification and it is such carbon dioxide which becomes marketable after it is compressed at a pressure of 1000 to 1800 lbs. per sq. inch in cylinders of the specifications laid down by the Government of India under Rule 11 of the Gas Cylinder Rules, 1940.

Notwithstanding the divergence of opinion between the two experts one thing is clear and that is that in the case of both sugar and soda ash the manufacturer does require carbon dioxide for the purpose of producing the two articles and sets up lime kiln for that purpose. The question is whether what he actually produces by combusting limestone with coke is carbon dioxide and if so whether it is compressed carbon dioxide as contemplated by Item 14-H.

In the course of their arguments counsel referred to certain works on Chemistry in general and sugarcane industry in particular. There are observations in some of them which might throw some light on the question before us. The Handbook of Cane Sugar Engineering by E. Hugot (1960 ed.) at pp. 286 to 289 states that carbon dioxide necessary for the carbonation process is produced at the same time as lime in a lime kiln adjacent to the sugar factory. The combustion of limestone with coke produces kiln gases consisting of carbon dioxide, carbon monoxide, oxygen, nitrogen and a certain amount of moisture. The proportion of carbon dioxide in these kiln gases varies from 25 to 33% averaging about 30%. The carbon dioxide leaving the washer is at a temperature of 60 degree C. Its pressure at the suction of the pump varies from 1.6 to 5 in. of mercury and the delivery pressure varies from 4 to 10 lbs. per sq. inch. It is also stated that the pumps known as Co₂ pumps are fully analogous to air pumps. (see also Cane Sugar Handbook by Guildord L. Spencer and G. P. Meade, p. 138). The carbonation process according to Hugot is one of the cheapest cleanest and most reliable process in the sugarcane industry ensuring standard quality of sugar. Roger's Industrial Chemistry, (6th ed.) p. 415 in the chapter dealing with "Alkali and Chlorine production" states thus :-

"The kilns used in the process are built and operated with special precautions to produce as high a concentration of Co₂ as possible. In practice 41 to 43 per cent of Co₂ is obtained in kiln gases with very little Co or O₂, the rest of the gas being N_{15/2}."

At pp. 415 to 417 of the said work the solvay process is described in the same terms as in the affidavit in support of the petition of Tata Chemicals Ltd. J. A. Timm in his General Chemistry, (4th ed.), p. 470 states that commercial carbon dioxide can be obtained as a bye-product of certain industries, e.g., flue gases. R. Norris Shreve in his Chemical Process Industries, (3rd ed.) states that there are three important processes for commercial production of carbon dioxide, viz., flue gases by burning carbonaceous material, bye-product from fermentation industries through dextrose breakdown into alcohol and carbon dioxide and bye-product of lime kiln operation. He also states that an absorption system is used for concentrating Co₂ gas obtained from sources 1 and 3 to over 99%, and that in all cases the almost pure carbon dioxide must be given various chemical treatments for the removal of minor impurities which contaminate the gas. Similarly, Kirk-Othmer in the Encyclopedia of Chemical Technology, (2nd ed.) Vol. 1, p. 722 observe as follows :-

"The carbon dioxide evolved consists of both that generated by the decomposing limestone and that resulting from combustion of the carbon in the coke. The kiln

gases are considerably diluted with nitrogen from the air used to burn the coke; they usually contain 37% to 42% carbon dioxide together with stone dust, coke ash, particles and gaseous impurities. The gas is cooled to some extent in the kiln itself by the upper layers of stone; it is further cooled and purified in water scrubbers until it is absolutely free from dust and tarry matters, and then, in the more modern plants which make a very pure soda ash, the gas is finally purified electrostatically."

Arthur and Elizabeth Rose, in their *Condensed Chemical Dictionary*, (7th ed.) p. 178 divide commercial carbon dioxide into two grades, both of them having at least 99% carbon dioxide. Such carbon dioxide when solidified is packed in 50 lbs. blocks in insulated boxes and is at a temperature of 109 degree below zero. When liquified it is packed in steel cylinders. The uses of solidified or liquefied carbon dioxide are refrigeration of foods, carbonated beverages, industrial refrigeration, fire extinguishers, welding etc.

These extracts show that commercial carbon dioxide as brought to the market for being bought or sold and used for the purposes enumerated above has content of at least 99% of carbon dioxide and is either compressed and packed in steel cylinders or liquefied or solidified.

As the Revenue argued these concerns undoubtedly require carbon dioxide in the processes employed by them while manufacturing sugar and soda ash and to meet their requirement they have set up lime kilns by which they produce kiln gas which includes carbon dioxide to the extent of about 30 to 35%, which they in fact use after compressing it through a pump or otherwise, at one stage or the other in their manufacturing processes. Nonetheless, is it possible to say that the lime kilns set up for the aforesaid purpose produce carbon dioxide and even if it be so, that at one stage or the other, through the pump or otherwise, the carbon dioxide so produced becomes compressed carbon dioxide as envisaged by the legislature when it decided to introduce Item 14-H in the First Schedule ? It cannot be gainsaid that by burning limestone with coke in the kiln the manufacturer actually produces kiln gas of which one of the constituents undoubtedly is carbon dioxide and which he utilises while producing his ultimate excisable goods. But if it is possible to say that what he produces is carbon dioxide during the process which Mr. Palkhiwala termed as an integrated and continuous manufacturing process or separately as the Revenue insisted, it is equally possible to say that the combustion of limestone with coke results in the manufacture of nitrogen, whose content the kiln gas is about 53%. As the text-books produced before us and the affidavits show, the correct picture is that what is produced is kiln gas which consists of several gases, viz., carbon dioxide, carbon monoxide, oxygen and nitrogen, the last one being in a larger quantity than carbon dioxide. The mixture of gases so generated is known as kiln gas in the trade, i.e. to those who manufacture sugar and soda ash. The affidavits of concerns which use carbon dioxide definitely assert that kiln gas is never known in the market as carbon dioxide nor is it a marketable article in the sense that it is loose and is not transportable nor is it brought to the market for being bought and sold unless carbon dioxide is extracted out of it. Such extraction requires an elaborate plant. After extraction it would have to be compressed in cylinders of certain specifications or liquefied or solidified before it can become a marketable article.

It is true as the Revenue contended that the gas produced through the kiln can be made marketable in the sense that it can be sold in the very same condition in which it is produced to concerns interested in the carbonation process through, for example, pipes. But, apart from such a method of disposal being uneconomic and hardly likely to be employed by the trade, though it is possible in theory, what would be transported is that which is produced through the kiln, viz., the kiln gas containing among other things a certain quantity of carbon dioxide. As one of the text-books points

out carbonation process is employed by manufacturers of sugar because it is one of the cheapest methods to ensure production of sugar of standard quality. The fact is that in employing carbonation process the manufacturer who requires carbon dioxide produces kiln gas and as that mixture of gases contains carbon dioxide he pumps through a pipe that mixture of gases and not carbon dioxide alone extracted from it. Therefore, in truth and in fact what he uses is the kiln gas produced by him in the lime kiln. Even assuming that this gas is compressed either through a narrow pipe what is compressed is the kiln gas and it is that kiln gas containing no doubt a certain percentage of carbon dioxide which is inducted in the sugarcane juice for refining. The same must also be said of the solvay process used in the production of soda ash though in that case the percentage of carbon dioxide is larger than in the case of refining sugarcane juice

The Act charges duty on manufacture of goods. The word "manufacture" implies a change but every change in the raw material is not manufacture. There must be such a transformation that a new and different article must emerge having a distinctive name, character or use. The duty is levied on goods. As the Act does not define goods, the legislature must be taken to have used that word in its ordinary, dictionary meaning. The dictionary meaning is that to become goods it must be something which can ordinarily come to the market to be bought and sold and is known to the market. That it would be such an article which would attract the Act was brought out in *Union of India v. Delhi Cloth & General Mills Ltd.* [[1963] Supp. 1 S.C.R. 586.]. The contention there was that in the course of manufacture of vanaspati, a vegetable product from groundnut and til oil, the respondents brought into existence at an intermediate stage of manufacturing refined oil which fell within the description of "vegetable non-essential oil, all sorts," in Item 23 of the First Schedule. The contention would seem to assume that the goods subjected to duty must be goods known as goods known as such in the market. The contention was that the respondents, after they bought raw oil with all its impurities, manufactured, by application of certain processes of refinement, refined oil which was the same as refined oil available in the market and that it was "refined oil" which became after further processes the ultimate vegetable product. It was argued that the fact that the vegetable product was the ultimate product and was chargeable to duty did not alter the position that at an earlier stage, the respondents manufactured "refined oil" as known to the market and that the fact that they did not put this "refined oil" in the market but used it to produce the finished product did not affect their liability. This Court held that if a new substance was brought into existence from raw materials and that substance was the same as "refined oil" as known to the market it would be subject to duty. The question, therefore, was, was the substance sought to be charged "refined oil" known to the market? The affidavits showed that deodorization was necessary before the product could be called "refined oil". It was not in dispute that that process was employed after hydrogenation and not at the stage when what was called "refined oil" came into existence at an intermediate stage. No evidence was produced by the Union of refined oil being brought to the market without deodorization. It was held that raw oil purchased by the respondents for the purpose of manufacturing vanaspati did not become at any stage "refined oil" as known to the consumers and the commercial community.

The affidavits filed in the instant cases and the scientific works referred to above show that the mixture of gases produced from the kiln is known both in trade and in science as kiln gas and not as carbon dioxide. The Revenue has not produced any affidavit of persons dealing in carbon dioxide to show that kiln gas is known to the market as carbon dioxide. The aforesaid affidavits show that carbon dioxide known to and brought in the market for being bought and sold for its diverse uses is carbon dioxide compresses, liquefied or solidified as Item 14-H describes it. The analogy given by the learned Attorney-General of a manufacturer of cotton cloth also producing at an intermediate stage cotton yarn and such cotton yarn being liable to excise duty would not help the Revenue as

cotton yarn obtained by such a manufacturer is known as such in the commercial community and brought to the market for being bought and sold. That cannot be said of kiln gas. If kiln gas were to be offered in discharge of a contract to supply carbon dioxide it would certainly be rejected on the ground that it is not carbon dioxide but is kiln gas. It is also not correct to say that because the sugar manufacturer wants carbon dioxide for carbonation purpose and sets up a kiln for it that he produces carbon dioxide and not kiln gas. In fact what he produces is a mixture known both to trade and science as kiln gas, one of the constituents of which is, no doubt, carbon dioxide. The kiln gas which is generated in these cases is admittedly never liquefied nor solidified and is therefore neither liquefied nor solidified carbon dioxide, assuming that it can be termed carbon dioxide. It cannot be called compressed carbon dioxide as understood in the market among those who deal in compressed carbon dioxide. Compressed carbon dioxide is understood generally as carbon dioxide compressed in cylinders with pressure ranging from 1000 to 1800 lbs. per sq. inch. The mere fact that at one stage or the other kiln gas is pressed at 40 to 45 lbs. per sq. inch by a pump or otherwise cannot mean that it is compressed carbon dioxide. At the same time the duty being on manufacture and not on sale the mere fact that kiln gas generated by these concerns is not actually sold would not make any difference if what they generate and use in their manufacturing processes is carbon dioxide. The fact that the gas so generated has carbon dioxide below 99% and does not conform to the specifications of the Indian Standards Institution also would not matter for the gas may be sub-standard, provided what is produced is carbon dioxide.

In our view, the gas generated by these concerns is kiln gas and not carbon dioxide as known to the trade i.e., to those who deal in it or who use it. The kiln gas in question therefore is neither carbon dioxide nor compressed carbon dioxide known as such to the commercial community and therefore cannot attract Item 14-H in the First Schedule. In this view it is not necessary for us to consider certain other contentions raised by the appellants and the petitioners in the writ petition.

In the result, the appeals and the writ petition must be allowed and the orders passed by the High Court in the appeals must be set aside. We hold that the demand notices served on these concerns are illegal and must be quashed. The respondents in these appeals as also in the writ petition will pay costs to the appellants and the petitioner in the writ petition. The costs will be one hearing fee for the appeals and a separate set of costs in respect of the writ petition.

Appeals and Petition allowed.##

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